

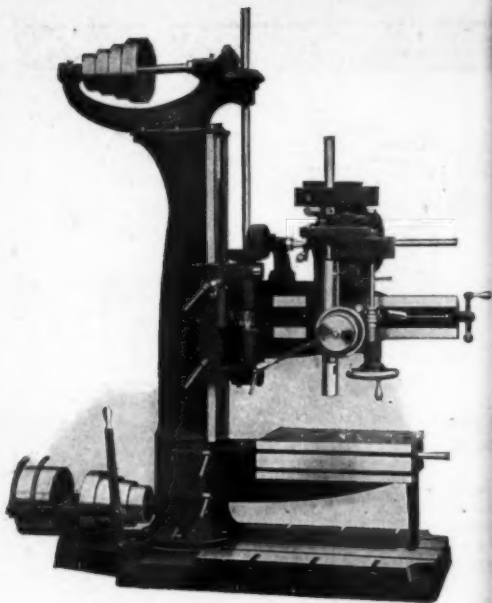
Issued Every Month

For Free Distribution to Users  
of Machine Tools

# HITCHCOCK'S MACHINE TOOL LIST

A Reference Book for Buyers  
of Iron Working Machinery

Published by  
**A. H. Hitchcock**  
1220-1235 Caxton Building  
Chicago



## ***Do Not Delay***

investigating the new Fostick 2 1/2 foot radial.

It is the machine for rapid and accurate drilling. Some of its features are—direct reading index; automatic safety stop; power elevating and lowering device, and ball bearing thrust collar.

We build a full line of Radials, from 2 foot to 6 foot inclusive; also a full line of Horizontal Boring, Drilling and Milling Machines.

**The Fostick Machine Tool Co.**  
Cincinnati, Ohio

Do you  
produce

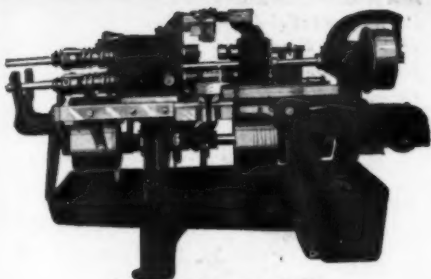
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NEW YO  
CHICAGO  
BOSTON,



**THE ACME AUTOMATIC**

**Do you find heavy tool marks on the finished products that you want especially accurate?**

They are usually caused by vibration of forming tools. A better method of machining will enable you to get smoothly finished parts without extra handling.

On jobs requiring heavy forming cuts the Acme Automatic di-

vides up the work among several tools instead of throwing it all on one. This not only insures smooth, well finished parts but also divides the time of the operation, so that each piece is completed in the shortest possible time and made accurate to a fine degree.

*The Acme Automatic has helped many manufacturers to get better duplicate parts. It will probably help you.*

*Write for the booklet "200 Reasons" and investigate the Acme Way*

**THE NATIONAL-ACME MFG. CO.**  
CLEVELAND, OHIO

NEW YORK, 77 White St.  
CHICAGO, 23 S. Jefferson St.  
BOSTON, 141 Milk St.

DETROIT, Majestic Bldg.  
ATLANTA, 3d Nat'l Bank Bldg.  
MONTREAL, in St. Henri at G. T. R.

*If a Radial Drill works  
in the hands of the Op-  
erator like the Eye in  
his head—then it is a  
satisfactory tool.*

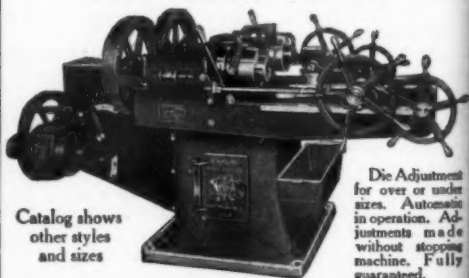


*The New Gang Radial Drill  
Catalogue ready for mailing*

**The Wm. E. Gang Co.**  
Cincinnati, O.

## **"Standard" Double Bolt Cutters**

**With Constant Speed Motor Drive**



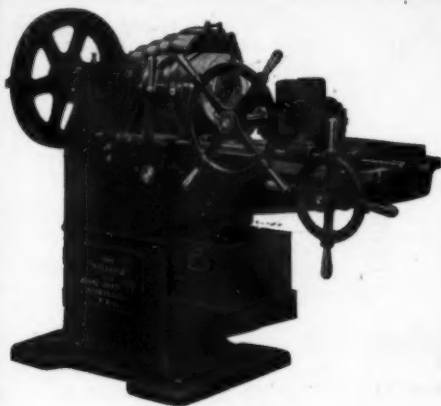
Catalog shows  
other styles  
and sizes

Die Adjustment  
for over or under  
sizes. Automatic  
in operation. Ad-  
justments made  
without stopping  
machine. Fully  
guaranteed.

**Universal Machine Company**

Enterprise St., Bowling Green, Ohio

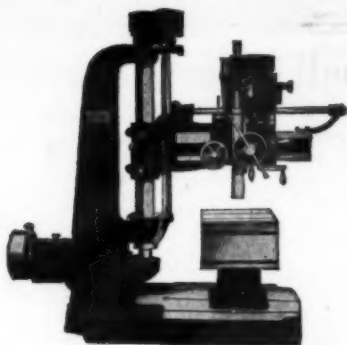




## Reliance Bolt Cutters

Built in sizes  $\frac{3}{4}$  inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

**The Foote-Burt Co., Makers**  
Cleveland, Ohio



## **"Morris" Plain Radial Drill**

Are time saving, cost reducing machines. Built along simple lines, unusually rigid, of first class workmanship and carefully inspected material, and priced at reasonable figures, they are the best drilling machine proposition on the market today.

Will handle high speed drills up to 2 1/2" in diameter easily and accurately. Always ready for service, anyone can use them at any time, and they last for years.

Made with cone or gearbox drive; also arranged for motor drive..

Specify "MORRIS" radials and solve your drilling problems for all time.

Let us send you our literature and quotation on your next requirements. There are economical features connected with these machines you should know about.

**The John B. Morris Machine Tool Co.**  
**Cincinnati, Ohio**

Makers also of the SUPERIOR MORRIS Engine Lathes

# Small Holes in Big Work

Is a Difficult Proposition to Handle  
Economically—Here's the Remedy



## The T. & F. 3-ft. Sensitive Radial

assures you the highest, therefore the most profitable speeds. Its specialty is drilling holes up to  $\frac{1}{4}$ -inch in large work.

Your profits go hand in hand with the productive capacity of your machines. The T. & F. has the flexibility of the radial coupled with the efficiency of the sensitive. This combination results in a capacity that is highly gratifying to manufacturers in these days of close figuring and keen competition.

So far as we know it is the only machine made today that may be equipped with more than one head and spindle, each head being especially designed for the work it is to do.

*Send us your name today so we can place all the good points before you and prove its value to you*

**The Taylor & Fenn Company**  
Hartford, Conn.

## 14-in. & 16-in. Quick Change Lathes



### Get the Facts

about other makes of lathes and then get our prices and specifications and compare them with the others. There are higher priced and lower priced lathes you can buy, but none equal to the Conover-Overkamp lathes, for the money.

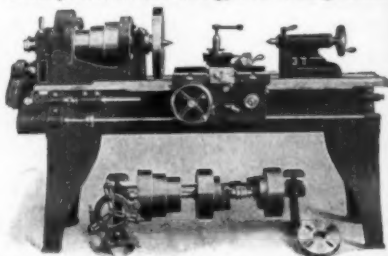
Let us send you detailed descriptions and quotations.

*Send for them today.*

**The Conover-Overkamp Machine & Tool Co.**  
840 Germantown St., Dayton, Ohio, U. S. A.

## An Especially Good Lathe

15-in., with 17-in. Swing, 3 or 4 Step Cone



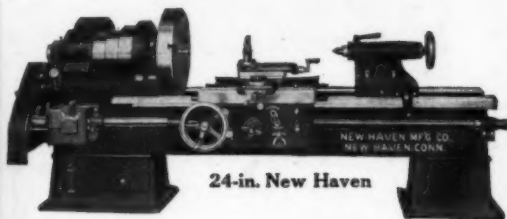
We have been building good lathes, and nothing but good lathes, for 27 years, and are making them now better than ever. We cordially invite comparison of both quality alone and quality-for-the-price. Write for the story of the Robbins Lathe.

**L. ROBBINS MACHINE CO.,**

**Worcester, Mass.**

# **New Havens**

**Are Right Up to Date  
And Up to Date Right**



Designed to meet the exacting demands of present-day shop practice, and built in a modern shop equipped with the latest improved machinery, New Haven Lathes are right up to date.

But with that touch of conservatism that goes with our sixty years' experience, we never sacrifice working points for talking points, and you can always count on New Havens being up to date right.

Our line includes about everything you want in modern lathes from 18-in. to 65-in. swing, single or double back gear, belt or motor drive. They are powerful, rigid, practical tools of the first class. Some of our customers think they are in a class by themselves. We know that they are built with the greatest care throughout, to insure dependability and permanent accuracy, so far as the present state of the mechanics' art permits. And the price is right, too.

***Write for full information  
We are at your service***

**New Haven Manufacturing Co.  
New Haven, Conn.**

## 15" Heavy, Accurate, Modern



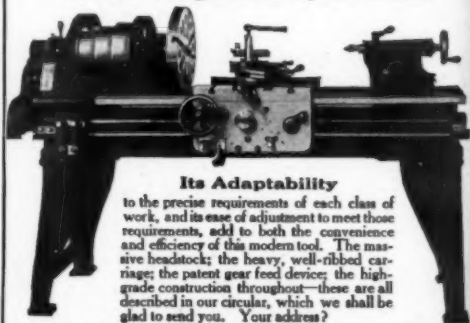
**For the  
Tool Room  
And Factory**

A LATHE that combines accuracy and capacity in such degree that it is equally efficient in tool room or factory. Made to meet the most severe requirements where accuracy is required, it also has the strength and rigidity to take heavy cuts without chatter. A modern tool that makes good anywhere.

*The price, too, is attractive for the quality. Write for it.*

**Rockford Tool Co.** Harrison Ave. & 11th St.  
Rockford, Ill.

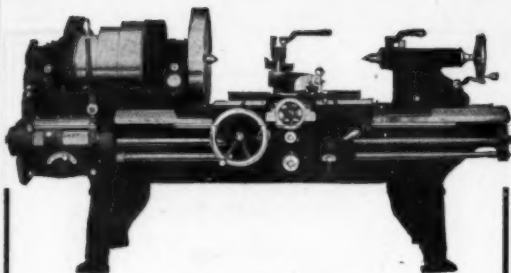
## A Superior 16-Inch Lathe 15 Feed Changes Instantly Obtainable



### **Its Adaptability**

to the precise requirements of each class of work, and its ease of adjustment to meet those requirements, add to both the convenience and efficiency of this modern tool. The massive headstock; the heavy, well-ribbed carriage; the patent gear feed device; the high-grade construction throughout—these are all described in our circular, which we shall be glad to send you. Your address?

**THE VON WYCK MACHINE TOOL CO., Cincinnati, O.**



## *Consult*

The Second-hand Lists of this Journal and see how few LeBlond Lathes are Listed by Machinery Dealers. And we have been building Lathes for 25 years.

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This is mighty strong evidence that the double friction back gears, the hardened steel spindle bearings, one piece box section apron with drop forged gears, *do* increase the productive life of a LeBlond Lathe.

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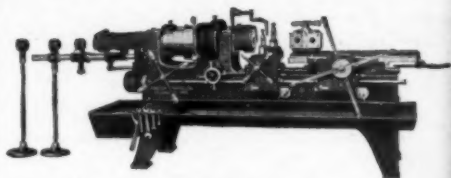
*Details sent on request*

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**The R. K. LeBlond M. T. Co.**  
Cincinnati, Ohio

## Geared Friction Head Screw Machine

With Independent Stops to Each Hole in Turret



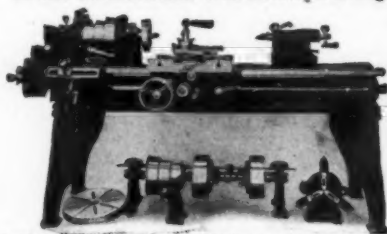
"FOSTER" SCREW MACHINES are built in several sizes, to take stock up to 4-in. through turret spindle. They are wonderful producers of duplicate parts, on account of their speed, capacity, stability and convenience, and they work equally well in brass or steel.

*You will find it profitable to know them. Won't you write?*

**FOSTER MACHINE CO., 200 Ward St., Elkhart, Ind.**

## Greater Convenience & Capacity

In this 14-inch Lathe with 15 $\frac{1}{4}$ -inch Swing



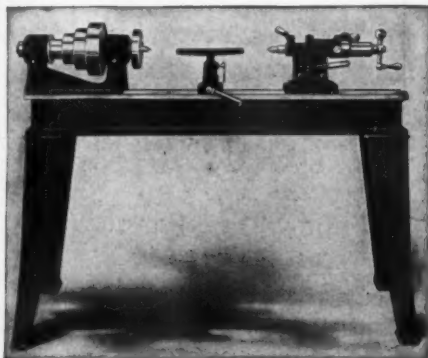
ONE HANDLE and ONE KNOB control 32 changes of feeds and threads, without removing a gear. Guaranteed accurate to .001 of an inch. Threads 2 to 32, and feeds 20 to 200 per inch. Phosphor bronze bearings. Every detail up-to-date or a little ahead.

*There's better profit with this tool. Write us*

**The Carroll & Jamieson Machine Tool Co., Batavia, O.**



# Blount Speed Lathes



Blount Speed Lathes are built in 11", 13" and 16" swing, with plain or self-oiling bearings, and beds from 3 to 12 feet in length.

The spindles are of crucible steel, are hollow, and fitted with Morse Taper. Cone pulleys are carefully turned and balanced for running at high speed.

The tailstocks have our patented screw and lever feed, and are provided with taper wedges, by means of which a correct alignment can always be maintained. All binding handles are conveniently situated above the ways.

*Ask your dealer about our lathes,  
or write for catalogue No. 14.*

**J. G. Blount Company**  
Everett, Mass.

The Racine Tool and Machine Co. will let you use a  
**Racine High Speed Metal Cutting Machine**

30 days on trial.



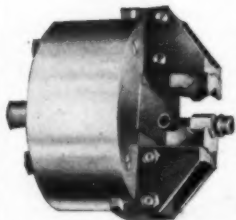
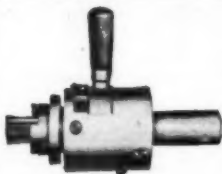
If it does not do as much metal cutting as FIVE to TEN ordinary Hack Saws and thereby reduce cutting costs about 500%, you have the privilege of returning the saw at their expense.

One trial order resulted in the sale of over fifty Racine High Speed Machines to one steel company. The "Racine" is now built in four sizes, viz., 6x6 in., 8x8 in., 12x12 in. and 12x15 in. Don't continue "hacking" your material but saw it off with an up-to-date Racine High Speed.

Write at once to

**Racine Tool & Machine Company**

The Junction, Racine, Wis., U. S. A.



Save Money and Increase  
 Your Production by Using

**AERO CHUCKS and  
 COLLAPSIBLE TAPS**

Our regular line of AERO CHUCKS are capable of chucking any shape and form of casting. The styles "C" and "D" Air Cylinders, which are single and double acting, respectively, are the most efficient and lightest in weight on the market today.

Our COLLAPSIBLE TAPS insure continued duplication of correctly threaded work. Chasers can be ground on the end, thus easily kept in proper condition for bottoming.

We are also builders of SPECIAL COST REDUCING TOOLS for manufacturing Brass and Iron goods.

Ask your dealer or write to

**Manufacturers Equipm't Co.**  
 169 N. Jefferson St., Chicago, Ill.

**SPECIAL** 6x9 Shaper, 14-in. traverse, with swivel and plain chucks that take work full length of traverse, and countershaft. **\$160**



**6x9, 8x12 and 10x15-Inch**

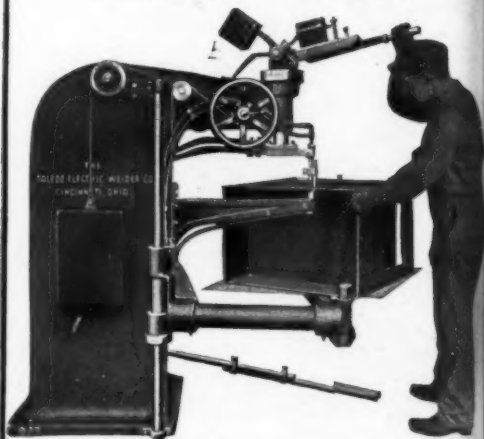
**Improved Shaping Machines**

The capacity of our improved machines has been increased at least one-half. The feed is automatic and reversible. The cutter-bar has a graduated swivel head. They will prove particularly profitable where much short work is now being done by filing and planing, often saving the room and expense of a large planer. A large opening in the machine permits the insertion of long work, such as shafts for keyseating, etc.

*Write for Shaper Catalog, also separate Catalog of Post Drills, Bolt Cutters, Bending Machinery and Nut Tappers.*

**Boynton & Plummer, Inc.,**  
**Worcester, Mass.**

## Riveting Costs Reduced from 60% to 90%



*It's the electric way—the rivetless riveter.*

Over 50 Stove Manufacturers are using these machines—Why? Because they can save from 60% to 90% in labor costs. If they couldn't make money by using them, they wouldn't buy them. Tell us what you are riveting, and we'll tell you what you can save. Then we will send you a machine on 30 days' free trial.

Our Bulletin No. 12 tells all about Spot Welders; No. 11 about Butt Welders.

*No Lease*

*No License*

*No Royalty*

### The Toledo Electric Welder Co.

4116 Langland Street, Cincinnati, Ohio



## Electric Air Cooled Drills

Are Best by Test

Are You Still Paying Two  
or three prices for a job  
just because you have al-  
ways done so



The fact that the U. S.  
Government tests prove they  
are superior in every respect  
should be convincing evidence  
to all users of this type of tool.

### Aside From This

there's the evidence of thousands of users all over the United  
States. Would they use them if they were not the best? Hardly.

**Want a Catalogue? A Postal will bring it.**

We use aluminum for Casing on all Drills to cut down weight  
Power from any Lamp Socket

**SENT ON TRIAL ANYWHERE**

*Made for alternating or direct current  
Just attach it to your nearest lamp socket*

**The United States Electrical Tool Co.  
Cincinnati, Ohio**

NEW YORK, 50 Church St.

BOSTON, 12 Pearl St.

CHICAGO, 8 E. Michigan St.

PHILADELPHIA, Heed Bldg., No. 1211 Filbert St.

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## Are YOUR Pulley Requirements Harder Or More Varied Than These?

In the plant of the Excelsior Motor Mfg. & Supply  
Co. of Chicago, makers of "Excelsior" Auto-Cycles, an

### "American" Steel Split Pulley

is used in running a line of polishing and buffing machines. On  
moment there is no resistance except the belt traction—the next, ten to  
fifteen men will be at work polishing, exerting an aggregate pull of 50  
horse power. The pulley does this work and stands up to it.

In making dynamometer power and speed tests for motor cycle  
engines the "Excelsior" people use "American" pulleys exclusively  
because of their lightness and strength.

Another "American" has done 10-inch belt-duty on a motor-  
driven air compressor for 4 years—a task requiring extreme endurance.

This Company has used several hundred "American" pulleys  
for 4 years *without one cause for complaint.*

The case of the Excelsior Company is no exceptional one. In  
hundreds of plants "American" pulleys are performing even harder  
tasks and fulfilling in every way our guarantee of double belt service  
under any conditions not requiring a special pulley.

Solve your pulley problems by writing for our printed matter or  
talking with an "American" dealer.



THE  
**AMERICAN PULLEY CO.**

Office and Works, Philadelphia, Pa.

NEW YORK

203 Lafayette Street

CHICAGO

BOSTON

124 S. Clinton Street

165 Pearl Street

*Dealers Everywhere*

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# Eliminates Guesswork from Tool Hardening

This view in the heat-treating room of a large Chicago manufacturer of railroad supplies, shows a

## **HOSKINS**

TRADE MARK REG.

## **Electric Furnace**

which has been in constant use for about three years, at such work as hardening and drawing punches, dies and shear blades of all kinds.



The user of this furnace says "we have been able to eliminate guess work and reduce to a science the work of heat-treatment of our tools," and "can hardly recommend it too highly for work of the above nature."

These results are obtained because the Hoskins Electric Furnace heats tools with an absolutely even, flameless heat, controllable with the utmost ease and accuracy. And, because a Hoskins Pyrometer is used to guide the hardener.

*For full information, please address Dept. D.*

## **HOSKINS MANUFACTURING COMPANY**

Electric—Furnaces, Pyrometers and Heating Appliances  
"International" Ammeters and Voltmeters

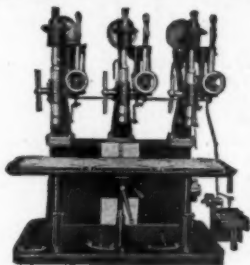
**461 Lawton Avenue, DETROIT**

Olin Building  
CHICAGO

Oliver Building  
PITTSBURGH

30 Church St.  
NEW YORK

## Rockford Gang's



They not only drill, but they bore, ream, tap and face without removing work from jig.

*Write for descriptive matter*

**Rockford Drilling Machine Company**  
Rockford, Ill., U. S. A.

## This Drill Saves Time

### Mechanics' 14-inch

A popular tool that does 50% or more of the work usually done on a 20-in. drill, and does it quicker and easier. Construction insures thorough dependability and long life.

We make a complete line of Standard Drills up to 36-in., and Gang Drills with 2, 3, 4, 5 and 6 spindles, of equal high quality.

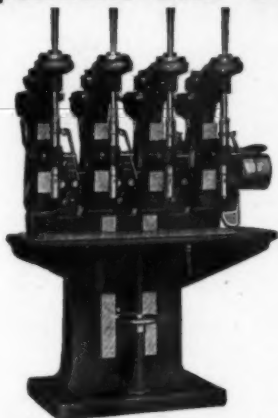
*If you are interested in tip-top too's at moderate prices, send for our catalog*



**MECHANICS' MACHINE CO., - Rockford, Ill.**



## Independent Unit Control



**KOKOMO  
HI-SPEED**

## Sensitive Drilling Machine

Each spindle has its own Belt Drive and Geared Speed Box, equipped with high duty Hyatt Roller Bearings.

This gives entirely *Independent Unit Control*, enabling the operator to select either one of four speeds for each of the four spindles, *any speed for any spindle* being obtained without interfering with the operation or speed of the other spindles.

All adjustments and speed changes are made from the front of the machine without wrenches or tools.

Combines highest accuracy with most rapid production. One, two, three and four spindles; drilling capacity, all sizes, up to 1½-inch drills.

*Write for Bulletin 160; It gives interesting details.*

**Superior Machine Tool Co.**  
**Kokomo, Indiana, U. S. A.**

Manufacturers of the Highest Grade and most complete line of Vertical Drilling Machines in the world.

# Silver's 20" Drills

## Eight Styles

**LEVER FEED**

**LEVER and WHEEL FEED**

**POWER FEED and Automatic Stop**

**POWER FEED with Back Gears and Automatic Stop**

**Round or Square Base**

*Send for catalog*



Fig.  
858

**The Silver Mfg. Co., 385 Broadway SALEM, OHIO**



## Burke Quality Excels on Fine Points

To get the

## Burke

quality, be sure that the name and address (Conneaut, O.) are cast on the frame of the machine.

**For Sale Everywhere**

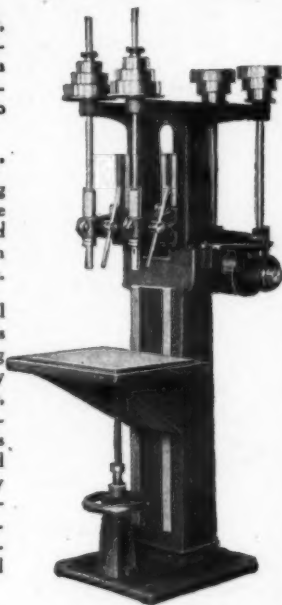
# Frills And Fancies

## Don't Help Production

Simplicity, accuracy, and the quality of endurance which keeps a machine steadily operating at full capacity do help it.

Twenty-five years' experience in building good drills, has put these attributes into the Reed Drills, and made them mean something to you.

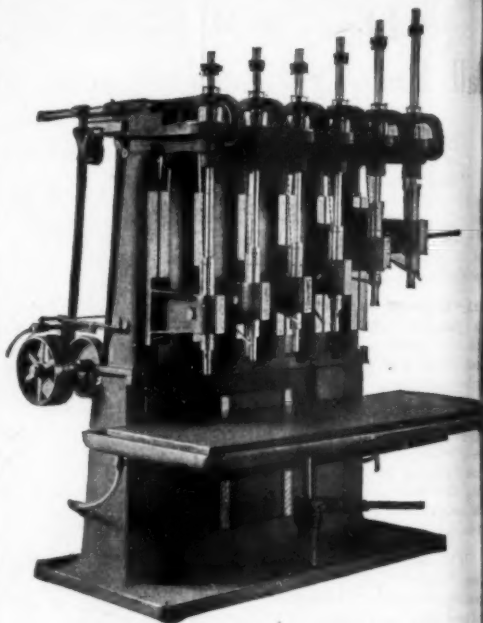
This new design will appeal to you. It is compact without being crowded, of heavy modern construction, and above all convenient. Every detail has been carefully worked out to insure durability as well as efficiency—to make it an exceptional producer. Furnished with power feed if desired.



*Ask for prices. They will interest you.*

## Reed Drill Company


43 Hammond St., Worcester, Mass.



**For 1½-inch Drills and Smaller**

**New Henry & Wright  
Ball Bearing Drilling Machine**

Designed especially for automobile and other manufacturers who seek high accuracy, high efficiency and high economy in their drilling equipments. A machine that is breaking records. One to six spindles.



## Henry & Wright Ball Bearing Drilling Machines For Larger Work

The splendid success of our Ball Bearing Sensitive Drilling Machines has created a demand for a larger machine with similar time and labor saving capabilities. We have met it with a new design, embodying the patented and improved features of our smaller machines with some original ideas that add materially to its practical effectiveness.

A multiple spindle machine of the new type is shown on the opposite page. It is of unusual weight and rigidity, is fully equipped with ball bearings, and has ample power to drive high speed drills efficiently in sizes from 1½ inches down to the smallest.

The success of the new machine is indicated by the fact that its service records have caused the drilling department of one of the largest concerns in the country to be entirely overhauled and re-equipped. After most exhaustive and searching tests, the economy of this machine was found to be so great that longer use of the old equipment could only be regarded as wasteful extravagance.

The design covers machines with from one to six spindles, either of which, according to the work you have for it, will speedily save its cost for you, besides enlarging your facilities and possibly improving the accuracy of your drilling.

You cannot fail to be interested in a machine that marks so great an advance as this one does in the practical work of making holes, making them right, and making them at minimum cost. Hence you should write us for full description.

*Don't forget that you can have a drilling chart showing proper feeds and speeds for carbon and high speed drills if you will merely say you want it*

**The Henry & Wright Mfg. Co.**  
**760 Windsor St., Hartford, Conn.**



Nested

## For Drilling Economy

**Wear-Ever Sockets** use up drills with broken or twisted shanks. Just grind a flat on one side.

**Wear-Ever Sockets** do not twist the tang of the drill, and, when nested, allow no chance for wear on tangs of the sockets themselves.

**Wear-Ever Sockets** have a collar reinforcement at the base, which adds great strength and prevents flaring. It also separates nested sockets at the desired point without first knocking the entire set out of the drill spindle.

**Wear-Ever Sockets** have other advantages, described in our printed matter.

For Sale by Dealers

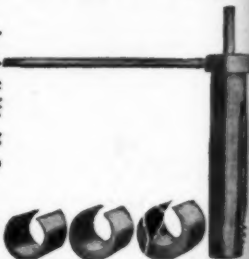
Write us for special approval offer

**Scully-Jones & Co.**

846 Railway Exchange, Chicago, Ill.

## KEYWAYS cut on the drill press

Internal keyways, either straight or taper, are cut perfectly on the drill press by means of a high speed milling cutter in holes 5-8 to 12-in. diameter.



Over 3000 in use.

Get Booklet O and prices

**National Machine Tool Co.**

2270 Spring Grove Ave.,

Cincinnati, Ohio

# Every Hour Saved

on a job decreases production costs in your plant. "It's the *wasted time* that costs us," says the Superintendent.

When *big* drill presses are tied up waiting for *small* drills, a lot of your money is not producing all that it should.

*Small tools can help to make your big ones profitable.*

## "Detroit" Twist Drills

save time on every job. This means more work on the same machines for the day's output.

Comparative tests have *proved* that they will enable you to cut from 8 to 30 inches more metal per grinding. Isn't it worth your while to try them?

Send for Catalog "J". Select what you want for a good stiff test. We'll ship them on a satisfaction guaranteed basis that must convince or cost you nothing.

## DETROIT TWIST DRILL COMPANY



*Improving Twist Drills Since 1856*

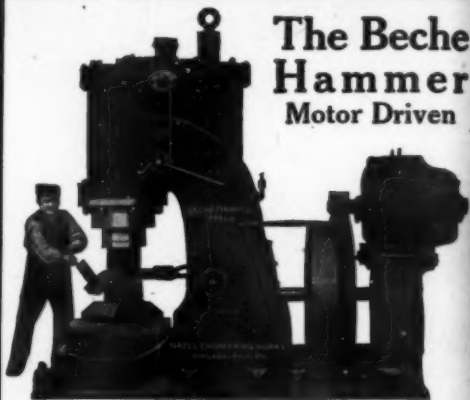
510-522 Fort Street, Detroit

1926 Wabash Ave.  
Chicago

30 Church St.  
New York

633 Market St.  
Philadelphia

# The Beche Hammer Motor Driven



**The Heaviest, Most Powerful, Efficient  
and Economical Hammer of Its  
Size on the Market.**

*Hammer and Compressor Combined, No Piston  
Rods, Springs, Straps or Cushions.*

## **Simple—Durable—Reliable**

Powerful, non-bounding, squeezing blow. Positive, flexible control. Long stroke. Variable blows at will. No adjustments. Dies at any angle. Belt drive, no countershaft. Motor drive, geared direct.

### **Sizes and Normal Capacities of Beche Hammers**

66 lb.	165 lb.	250 lb.	350 lb.	500 lb.	770 lb.
2" dia.	4" dia.	5" dia.	7" dia.	8" dia.	9" dia.

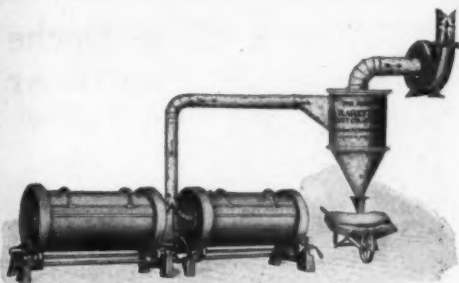
*Write for Catalogue and Prices*

**Nazel Engineering & Machine Works**

Sole Builders for United States and Canada

5th and Luzerne Sts. - - Philadelphia, Pa.





## Solves Serious Dust Problems

The Morse Rarefied Collector is used  
in big plants and little ones

And these firms and corporations did not install our Collector because of its good looks, but because they were convinced that it could deliver the goods.

When the Engineering Departments of such plants as the General Electric Co. of Schenectady, N. Y., the Oliver Chilled Plow Works of South Bend, Ind., and the Weston-Mott Co. of Flint, Mich., have had six or more of the Morse Collectors installed in their respective plants, there must be something more to them than we could tell you in this space.

*Will you give us an opportunity to tell the whole story?  
Just say you're interested in Collectors.*

**The Knickerbocker Company**  
Jackson, Mich.



## Efficient Fire Protection Is More Important than Saving Insurance But Terrell Steel Equipment Combines the Two

It decreases the sum you actually pay out for insurance and it lessens the risk you have to carry yourself. Steel equipment sets up a strong bulwark against the spread of fire, almost equal to a fire wall, and often saves much valuable property that with wooden fixtures would go up in smoke. The small additional cost, which is speedily recovered in the economy, counts but little against the security it affords.

## Steel Bins, Shelves and Lockers

enable you to use your storage space with maximum economy, to handle stored material most easily and quickly, and to expand, reduce, or rearrange your entire equipment so as to adapt it perfectly to your varying needs. You have what you want when, and as, you want it. You don't need to buy for the future; the Terrell unit system of construction permits additions to be made as required. The units, which are made in a large variety of sizes and styles, may be arranged to suit any space you wish to use, and as easily shifted about and readjusted without loss or trouble. Their use means service, security and a long-run economy that is worth careful consideration.

If you will consult us we shall be glad to give you the benefit of our broad experience in planning factory equipments, entirely without expense or obligation.

*As a preliminary, why not look over our catalogs?*

*They are free for the asking*

**Terrell's Equipment Company**

Hall and Division Sts., Grand Rapids, Mich.



**LEIMAN BROS. ROTARY POSITIVE  
HIGH PRESSURE BLOWERS  
AND VACUUM PUMPS**

For use with all Oil and Gas  
Appliances, Agitating Liq-  
uids, Sand Blasting or

**VACUUM  
CLEANING**

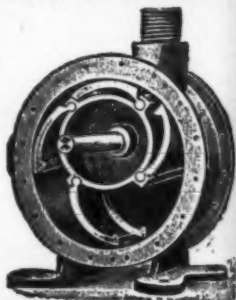
1 oz. to 10 lbs. pressure  
1 to 20 in. Vacuum  
2 to 338 cubic ft. per min.

Take up own wear.  
Cant get out of order.

Blower Catalog No. 26  
Vacuum " No. 27

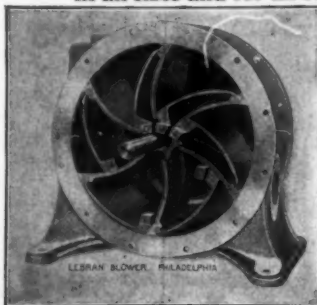
**LEIMAN BROS.**

62 R. John St., NEW YORK



**Positive Pressure Blowers  
and Vacuum Pumps Patented**

In all sizes and for all services



LEBRAN BLOWER PHILADELPHIA

**"Built  
Like A  
Machine  
Tool"**

—  
Quiet  
Durable  
Efficient  
—

Write for data

**THE LEBRAN CO., 940 N. 9th St., Phila., Pa.**

## Saved \$71.00 in Six Months

That's at the rate of **TWICE ITS COST** each year. The Brazil Machine & Foundry Co. of Brazil, Ind. say:

"We have only had this tool about six months, but it has paid for itself in **SAVING OF LABOR.**"

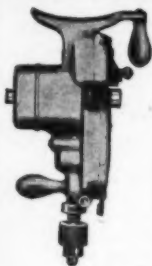


If you have any lifting to handle, it will save you *its cost several times over each year.* From an economical standpoint, you can't afford to be without the "Handiest Tool in the Shop" Portable Floor Crane and Hoist.

*Write today for Booklet E8*

**The Canton Foundry & Machine Co.**  
**Canton, Ohio**

## Ready on the Minute—



Emergency jobs are constantly springing up; you need a dependable tool—ready at an instant's notice. Wherever there's an ordinary lamp socket, your machinist can connect up a

### TEMCO MODEL B ELECTRIC PORTABLE DRILL

and go to work. He's ready for drilling; ready for tapping; ready for sharpening tools; ready for grinding valves. He takes the tool to the job—not the job to the tool.

*Send for our well illustrated catalog*

**The Temco Electric Motor Co.**  
55 Sugar St., Leipsic, Ohio, U. S. A.

Attach this ad to your letter-head and mail it in today.



**Screw Feed Drill**



**Bench Grinder**

### HIGH POWER PORTABLE ELECTRIC TOOLS

Universal Drills that operate on both A. C. and D. C., also D. C. Drills and A. C. Drills—all in  $\frac{1}{4}$ "- $\frac{5}{16}$ "- $\frac{3}{8}$ "- $\frac{1}{2}$ "- $\frac{5}{8}$ "- $\frac{3}{4}$ "- $\frac{7}{8}$ "- $\frac{1\frac{1}{2}}$ " Sizes.

**Reamers and Grinders**

*Write for Catalog and  
TEST REPORT*

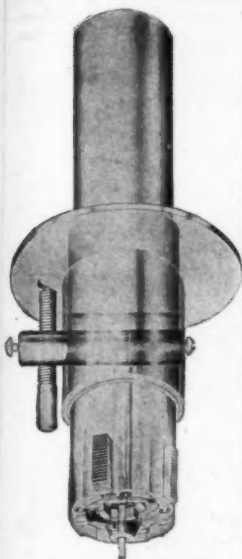
New York Office, 50 Church St.

## THE STANDARD

**ELECTRIC TOOL CO.**  
CINCINNATI, OHIO, U. S. A.

# For Better Tapping Work

## At a Much Lower Cost



Sliding Collar Type

### The Murchey Collapsing Taps

are made in all sizes, from 1" to 12". Save 50 to 75% and give increased efficiency.

Strong as a solid tap—no complicated parts to wear out. Cut shows simple action and positive adjustment for taking up wear of chasers; also permits making larger or smaller thread, giving a tight or loose fit as wanted.

Used by the principal automobile manufacturers where accuracy is essential.

Adapted to all kinds of tapping machines, drill presses, monitor machines, boring mills and turret lathes. Save reversing and make stripping impossible.

Shanks made to fit any style machine without extra cost.

### Special Offer:

Send us blue prints or samples of work, with your order for a Murchey Collapsing Tap. Try it out thoroughly for efficiency and time saving. If not all we claim, return in 10 days at our expense. You take no chances, and we know the results will surprise you.

*You cannot lose by accepting our trial order plan*

**Murchey Machine & Tool Company**  
56 Porter St., Detroit, Mich.

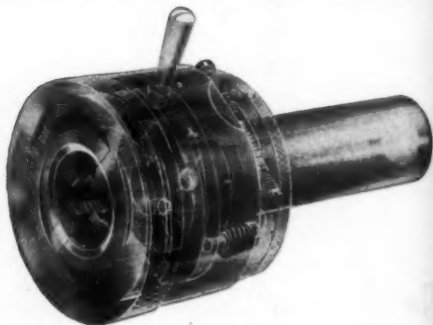
Are you using the most improved Type of Automatic  
Threading Die? If not, get in line and use

**New Model Type A**

# **Ideal Opening Die**

Simple construction—Few Parts—and impossible to get  
tapered thread

*Let us know your wants. Write for information regarding Die.*



This Die does not depend on any springs for opening.  
As soon as Clutch is disengaged the cutting strain opens Die.

*Sing a song of Die-heads,  
Ours is up-to-date;  
Half a dozen pieces  
Is its aggregate.  
When the Die is opened,  
It works without a spring;  
Chasers cut a perfect thread,  
As slick as anything.*

Manufactured By

## **The Ideal Tool & Mfg. Co.**

Office and Factory, BEAVER FALLS, PA.



Automatic  
ise

Die

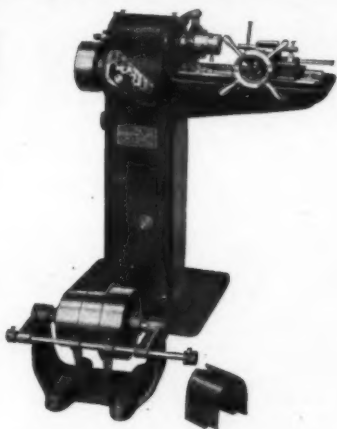
le to get

ding Die.

opening,  
pens Die.

Co.

A.



## The Geometric Threading Machine Is a Hustler

It will hustle out the threads on small parts in a way that will surprise you, and give you good, clean threads, too.

It is handling work that cannot be threaded to advantage on the usual Screw Machine, such as

Gas Fixtures,  
Drop Forgings,  
Brass Castings,  
Spark Plugs,

Connecting Rods,  
Automobile Parts,  
Electrical Specialties,  
Set Screws, etc.

*Submit your threading proposition to us*

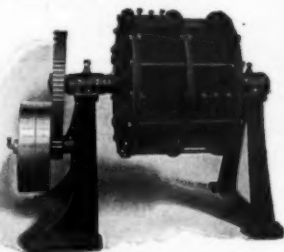
*Send for Descriptive Booklet*

**The Geometric Tool Company**  
New Haven, Conn.

Small Metal Articles

## Burnished Cheaper and Better

ONE MAN, with an Abbott Barrel, does as much burnishing as dozens of men on polishing or buffing machines, and does it better. The steel balls do not remove any of the material, but burnish and harden the surface without abrasion.



### The Abbott Burnishing Barrel

Is narrow and of large diameter. In operation it is half full of steel balls, weighing several hundred pounds, which work into a high pile and, in sliding down, bring weight and friction upon the work. Each ball is an individual burnishing tool, and thousands are working at once. This is Steel Ball Burnishing, of which we are the originators.

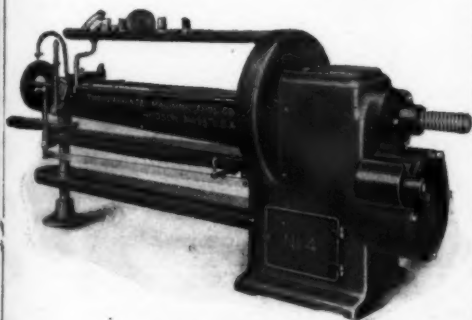
We have been sending Abbott Barrels and Abbott Balls to responsible concerns on approval for over three years. In most cases we receive a check before the approval time expires.

*Write for free booklet and send samples for burnishing*

**The Abbott Ball Company**  
Elmwood District      Hartford, Conn.

**Instant 2-Speed Design**  
**Lapointe Broaching Machine**

**With Ball Bearing Thrust and  
Ball Bearing Mounted Shafts**



**The Lapointe No. 4**

This machine will take care of your heaviest broaching, cutting keyways up to 2-inches and broaching square holes up to  $3\frac{1}{2}$ -inches. It is built also in three smaller sizes.

Square, hexagon, octagon, round and irregular-shaped holes, internal spiral grooves, straight and taper keyways, internal ratchets and gears are all cut easily and perfectly on our broaching machines—usually in a few seconds—never requiring more than a few minutes.

*When writing for catalog, we shall be glad to have you submit drawings, so that we can show you what we can do for you.*

**The Lapointe Machine Tool Co.**  
**Hudson, Mass., U. S. A.**



## SAVED

**\$355 in one month by using a  
Grant Noiseless Riveting Machine  
So Says One of Our Customers**

## WHY?

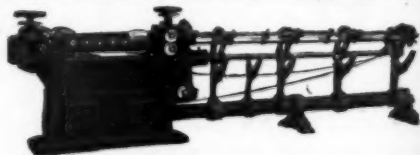
A boy or girl at \$1.00 a day is all that is required to operate the machine with perfect success.

The machine will do better work and much more rapidly than can be done by any other machine on the market.

We invite you to send us samples of your work, which we shall rivet and return to you, giving estimate of output and any other information you may desire.

*Send for catalog which shows several different sizes and styles of machines for different requirements*

**The Grant Mfg. & Machine Co.  
C. E. Station, Bridgeport, Conn.**



## A Lot of Work at Small Cost

can be produced on our Automatic Wire Straightener and Cutter, because all you have to do is to supply the coils of wire, so the operator has most of his time free for other work. It turns out *perfectly straight* wire cut to *accurate lengths*.

*Let us quote on a size suitable for your wire?*

**THE F. B. SHUSTER CO., New Haven, Conn.**

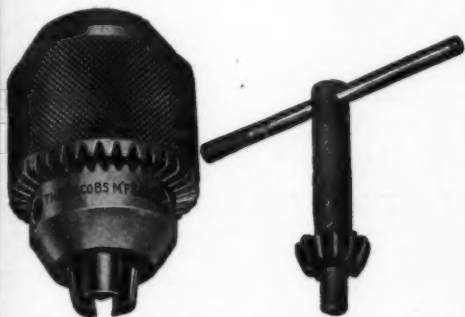
*Established 1866*

*Formerly John Adt & Son*

**Riveting Machines, Foot Presses, Sprue Cutters, Wire Formers, etc.**

## Superior Merit Rewarded

Were we to offer a prize for the most convincing statement regarding the real merit of the Jacobs Improved Drill Chuck, nothing more convincing could be said than a statement of the following facts:



More than 150,000 Jacobs Improved Drill Chucks have been purchased. More Jacobs Improved Drill Chucks were purchased during April, 1913, than in any other month of our phenomenally successful career.

There can be no other explanation of this fact except that the Jacobs Improved Drill Chuck has superior merit.

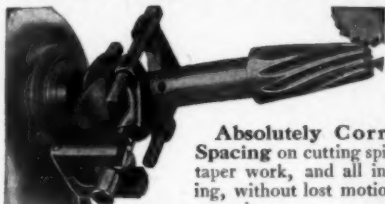
*Our 34-page illustrated catalogue is sent upon request.*

**The Jacobs Manufacturing Company**

**32 Union Place, Hartford, Conn., U. S. A.**

# The Red-E Milling Dog

Insures Accurate and Reliable Work



**Absolutely Correct Spacing** on cutting spirals, taper work, and all indexing, without lost motion or cramping.

**Reason why**—sliding tail with ball and socket joint.

*Save work, time and worry by using our line of Dogs and other Special Tools*

**The Ready Tool Co.,** 40 South Avenue, Bridgeport, Conn.



## Are You Tired of Paying Big Bills for High Speed Steel?

**ARMSTRONG TOOL HOLDERS**

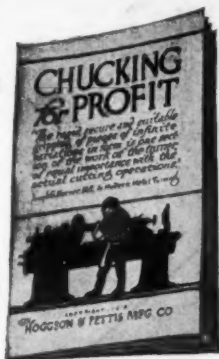
Make 1 lb. of Tool Steel go as far as 10 lbs. in Forged Lathe and Planer Tools.

*Write for catalog—it tells other advantages*

**Armstrong Bros. Tool Co.,** 308 N. Francisco Ave. CHICAGO.



**Will You  
Accept a Copy  
of this  
Meaty Little  
Book  
if We Send it  
Free?**



In many shops the job tickets show excessive time spent in chucking the work. This often changes what should be a profit into a loss, for the man's pay is the same for chucking time as for turning time.

Inadequate chucking methods also result in the unnecessary scrapping of much costly material.

"Chucking For Profit" will help you reduce these wastes in your shop—help you add to your net profits. It is full of valuable information for the practical-man-on-the-job, the foreman, the master-mechanic and especially for the **man who pays the bills.**

Tear out this page, write or stamp your name and address below, and mail it to us today. Your personal copy of the book will be sent at once, entirely free of cost or obligation.

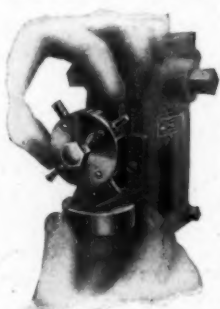
**The Hoggson & Pettis Mfg. Co., New Haven, Conn.**  
**Makers of the Sweetland Chuck**

Name .....

Address .....

# The Turret Punch

as used in the Union Combined Punch, Shear and Rod Cutting Machine is a decided improvement over



the old type of single punch and die. As shown in cut, the operator at all times has the use of four sizes of punch and die, without removing any tools from the

machine. This is only one of the many good features of this handy machine.

---

*You will find them fully described  
in our complete catalogue.*

---

**Union Manufacturing Co.**

26 Cortlandt St.,  
New York

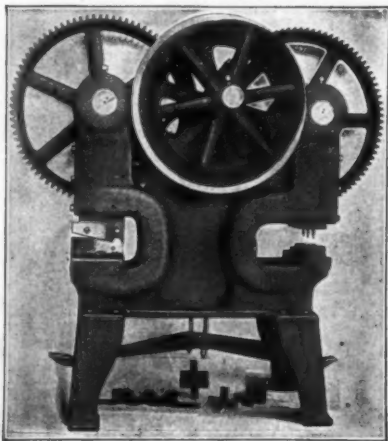
New Britain, Conn.

"Shear Department"



## **Punches—Shears—Bending Rolls**

**The Beloit Double End Combined  
Power Punch and Shear**



***Built in Three Sizes***  
**No. 9-A**

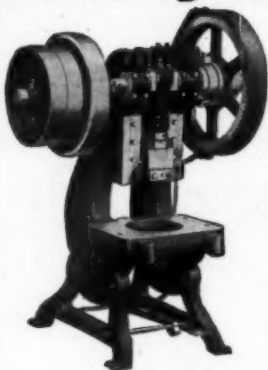
This combined power punch and shear is of the double end type, having a cutting-off shear on one end and a triple punch attachment on the other. Either one, two or three punches at a time may be used by inserting the sliding keys back of the proper punches. An angle shearing attachment can also be furnished if desired.

We manufacture a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls. We do not over-rate the capacities of our machines.

*Write for catalogue and prices.*

**Slater, Marsden & Whittemore Co.**  
**Box 444, Beloit, Wisconsin**

## Reducing Costs



The sure way  
to increase your  
profits.

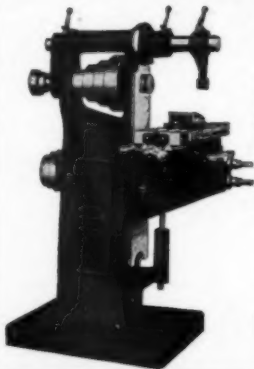
**HIGH DUTY**  
**ROCKFORD**  
PUNCH PRESSES

Not only **lower**  
costs but **speed**  
**up** production.  
Investigate the  
sure way.

*Write today for Catalog*

**Rockford Iron Wks.**  
**Rockford, Ill.**

## A New Rockford Miller



**With Power and Hand  
Horizontal Feed**

Rigid, accurate and well  
proportioned, this miller  
is especially designed for  
light manufacturing.  
Note stiffness afforded  
overhanging arm by  
flanged support.

**Range of feeds,**  
**22" x 6½" x 15"**

*We solicit your inquiry*

**Rockford Milling Mch. Co.**  
**Rockford, Ill.**

## Mount Gilead Hydraulic Presses

"For Your  
Pressing  
Needs"



**Hydraulic Bar Straightening Press**

36 years of successful press building experience is your assurance of absolute satisfaction from the use of Mount Gilead Hydraulic Presses. Our list not only includes Wheel, Bending, Forcing, Extracting, Baling, Power, Veneer and general Hydraulic Presses, but we also build Intensifiers, Accumulators and Hydraulic Pumps.

If your conditions are of the *peculiar* sort we can make a *special* press to suit your *exact* requirements; we have established a wide reputation in this respect.

Sending for interesting data, catalogs and other information will clearly reveal to you the reason why Mount Gilead Hydraulic Presses are best adapted "For Your Pressing Needs."

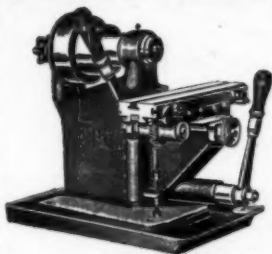
**Write NOW for full particulars**

**The Hydraulic Press Mfg. Co.**

**72 Lincoln Ave., Mount Gilead, Ohio**

**Eastern Office:—Rm. 1105Z, 39-41 Cortlandt St., New York City**  
**Chicago Office:—164 N. Clinton St.**

# Just The Machine

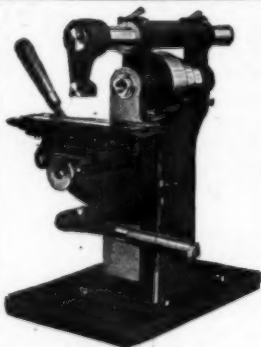


for those light cuts on details for Firearms, Sewing Machines, Typewriters, Bicycles, Electrical work, and a thousand and one other details used in the manufacture of the various products of the manufacturing world.

*Send for descriptive Circular*

**The Carter & Hakes Co.**  
West Winsted, Conn., U. S. A.

AGENTS—Marshall & Huschart Mehry. Co., Chicago, St. Louis, Indianapolis; Motch & Merryweather Mehry. Co., Cleveland, Detroit, Cincinnati, Pittsburg.



**Burke's No. 3  
Bench Millers  
Are Seasoned Tools**

Our system of tests insures accuracy, and our methods of construction make it permanent. Frames and parts are carried 6 to 8 months, after work begins on them, before the completed tools receive our final O. K., and all parts are finished and fitted with exceptional care.

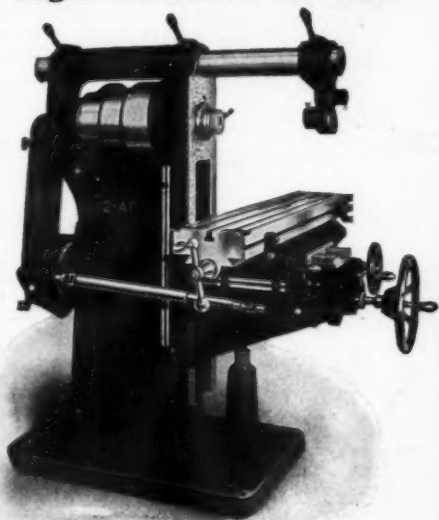
Longitudinal feed, 6 in.;  
traverse feed,  $3\frac{1}{4}$  in.; vertical  
motion of knee,  $8\frac{1}{4}$  in.; table  
surface,  $3\frac{1}{4}$  x 12 inch.

*Write for Catalog, which also shows larger and smaller sizes.*

**The Burke Machine Tool Co.**  
Conneaut, Ohio

# Garvin MILLING MACHINES

The Kind To Buy  
**Rigid—Powerful—Durable**



No. 2-A (All Feeds) Plain Milling Machine—Adjustments—28x8x19 in.

**IMMEDIATE DELIVERY**

**FOR FURTHER** { **ASK YOUR DEALER**  
**INFORMATION** { **OR**  
**WRITE US DIRECT**

*Send for circular No. 164*

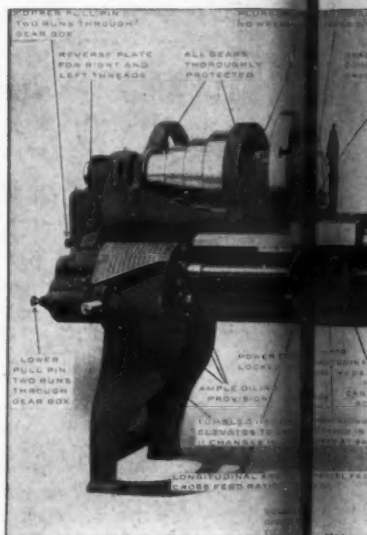
Manufactured by

**THE GARVIN MACHINE CO.**

Spring and Varick Sts., New York City

# CISCO 14 and 16ch

MODERATE  
IN  
PRICE



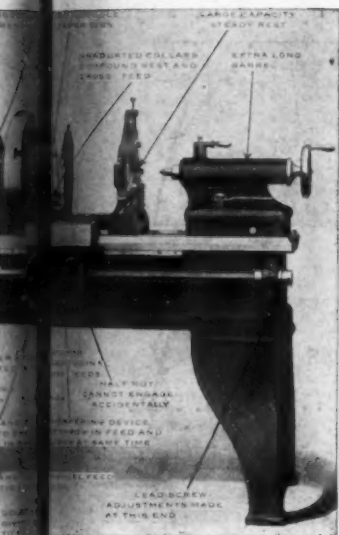
14-in. Swings 15 $\frac{3}{8}$ -in.  
16-in. " 17 $\frac{3}{8}$  "

Weight 600 lbs  
" 650 "

*You will be well with*  
**The Cincinnati Iron & Steam**  
Makers of 14 and 18-inch

# 16ch Engine Lathes

P  
O  
W  
E  
R  
F  
U  
L  
  
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K



Weight 500 lbs.  
" 350 "

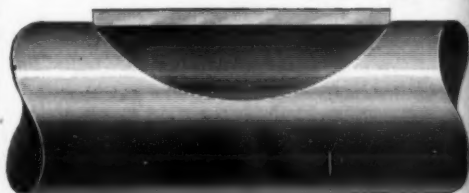
Cuts Threads 3 to 64  
" " 3 to 64

Equipped with *CISCO*

Company, Cincinnati, U. S. A.

14, 18-inch Lathes

# **"Whitney" Keys and Cutters** **For** **"The Woodruff System of Keying"**



**No. 16 CUTTER FULL SIZE**

"Whitney" Keys are made in 114 different sizes and in three grades as follows:

***Regular Carbon Steel Keys***

***Regular Carbon Steel Keys Case Hardened***

***Nickel Steel Keys Heat Treated***

"Whitney" Cutters are furnished in both Carbon Steel and High Speed Steel, so no matter what your requirements, you will find in our line exactly the Key and Cutter to meet your particular conditions.

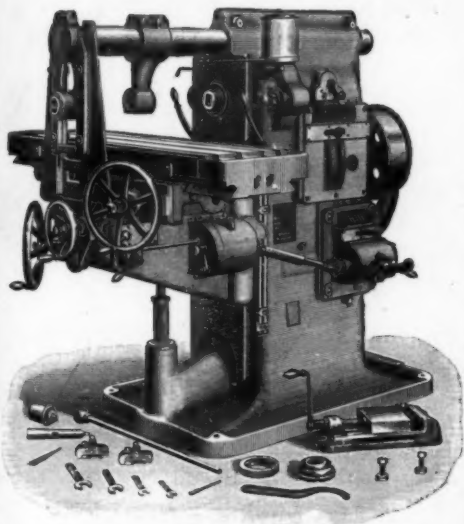
***Catalog No. 10 Gives Full Particulars***

**The Whitney Manufacturing Co.**  
**Hartford, Conn.**

Manufacturers of Hand Millers, High Grade Driving Chains, Keys and Cutters for "The Woodruff System of Keying," Presto Chucks and Friction Tapping Devices.



**Heavy Service Milling and a Machine  
Adapted to that Class of Work**



## **No. 5-B Heavy Plain Milling Machine**

Note the massive construction, large pulley to give a powerful spindle drive, and convenient arrangement of all levers and handwheels. These features are found in all B. & S. Constant Speed Drive Machines, and it is due to them that the machines are so successful in heavy milling.

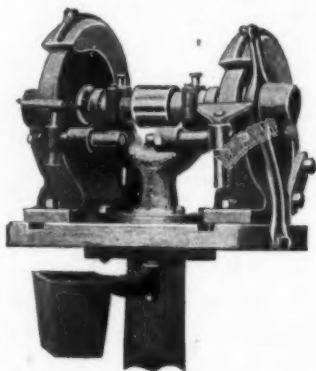
*Write us your requirements*

**Brown & Sharpe Mfg. Co.**  
Providence, R. I., U. S. A.

## **"Safety First"**

**Do you want an Emery Grinder that is really safe?**

***Here it is at last!***



## **Partridge Grinder**

**With New Safety Guards (Patents Pending)**

The new Partridge Guards meet the requirements of real safety, adjustability to the wear of the wheels, and ease of changing the emery wheels. The upper guard is a heavy ribbed steel casting, hinged on a double joint, so that it may be moved in or out, up or down, and always kept at the proper angle and the proper distance from the wheel. The lower guard is made of semi-steel. Either one is adjustable by loosening a nut. Provision is also made for exhaust connection.

I shall be glad to post you, for safety's sake, on the various sizes of Partridge Emery Grinders equipped with these new and dependable guards.

**Will you not write by next post?**

**E. O. PARTRIDGE**

**2047-9 W. Lake Street, . . . Chicago, Ill.**

# **FREE**

**TO**

**Designers  
Works Managers  
Superintendents  
Draughtsmen  
Machine Foremen  
Tool and Jig Designers  
Grinding Room Foremen  
Boss Patternmakers  
Foundry Superintendents  
Railway Master Mechanics  
Machine Tool Salesmen**

**and others interested in Reducing Cost of Machine Construction**

**1912 Edition**

## **Besly's Modern Disc Grinding Practice**

**Copyrighted**

**112 Pages**

**103 Pictures**

**A valuable treatise on grinding flat surfaces instead of planing, milling, shaping, turning or filing.**

**Shows the way to Reduced Cost, Increased Output and Improved Product.**

**Should be in the hands of every live manufacturer.**

**Write today for your copy of this valuable book and study this important subject. Mailed Free.**

**Charles H. Besly & Co.**

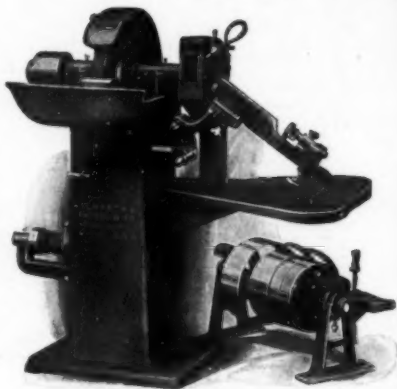
**Chicago,**

**U. S. A.**



**Registered  
Trade Mark**

## Two Machines For One Price



One floor space, one power bill and one upkeep expense are other advantages given with

### No Disadvantages.

Either part of the machine can be used without interfering with the other, and both can be used at the same time. Each is complete in itself, efficient, well made. If you have a drill grinder, the water tool grinder can be furnished plain.

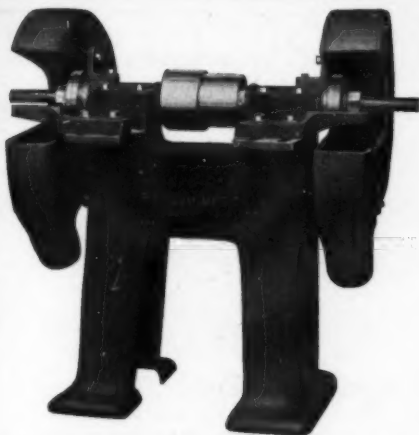
Plain NEW YANKEE Drill Grinders furnished in a multitude of sizes if you are not interested in the tool grinder.

We also make Drill Grinders or Plain Tool Grinders, Surface Grinders, Cutter Grinders, Center Grinders, etc.

*Ask for catalog*

**Wilmarth & Morman Co.**

1185 Monroe Ave., Grand Rapids, Mich.



## Ransom No. 6-B Grinder

Equipped with Steel Guards  
And Exhaust Pipe Connections

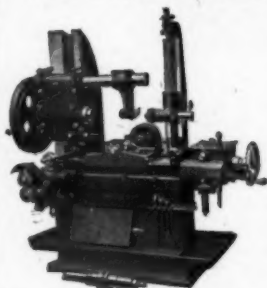
THESE RANSOM GUARDS are made of steel castings, and have exhaust pipe connections. A thin outer plate is made removable, so that wheels can be changed without disturbing the guard proper. Guards are slotted, so that they are easily set back as wheels wear down in diameter. This equipment adds much to the safety of the machine and prevents loose particles of emery from flying about the shop.

We make wet grinders and dry grinders; belt driven and motor driven grinders; grinders with or without steel guards; grinders and buffers of various styles and sizes for many purposes. Write for special catalog of a machine to meet your particular needs, or for complete catalog.

**Ransom Manufacturing Company**  
Oshkosh, Wis.

## Do You Want to Cut Gears?

If so, our acquaintance might prove profitable



### NEWARK GEAR CUTTING MACHINES

are designed for the automatic cutting of highly accurate, smooth running gears in all sizes and for all purposes. We want your acquaintance, because we have something to offer you that is worth while. If you don't think so, we can't trade; but isn't it just as well to find out about it?

*Won't you start it with a postal?*

**Newark Gear Cutting Machine Co.**

69 Prospect St., Newark, N. J.



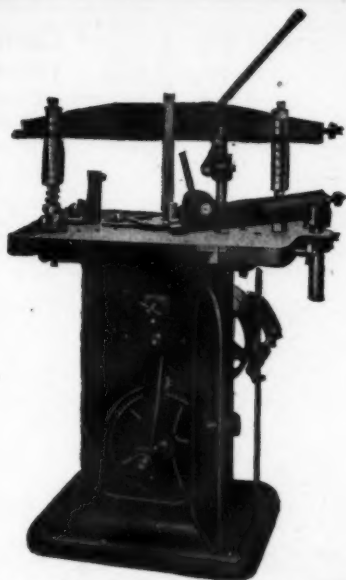
**Durant  
Counters  
Stamping  
Presses**

are INSEPARABLE in *up-to-date Shops*. Eliminate costly hand-counting, annoying under-runs and wasteful over-runs by using counters which are designed, built and sold right. Their count is absolutely accurate.

*Our Catalog No. 19 should be in your hands.*

*Write for it.*

**THE W. N. DURANT CO., Milwaukee, Wis.**



## DAVIS KEYSEATERS

**Made in Two Sizes**

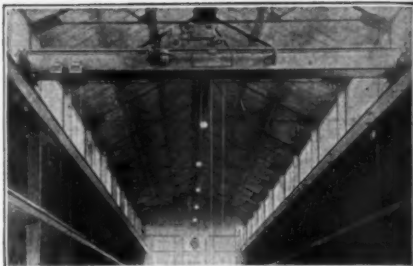
No. 1, Capacity  $\frac{1}{8}$ -in. to 1-in.; No. 2,  $\frac{1}{8}$ -in. to  $\frac{5}{8}$ -in.

**Prices Low—Production High**

They meet every requirement as a manufacturing machine and can be used economically on large or small lots. Also adapted for other work.

Write for free Treatise on Keyseating

**The W. P. Davis Machine Co.**  
Rochester, N. Y.



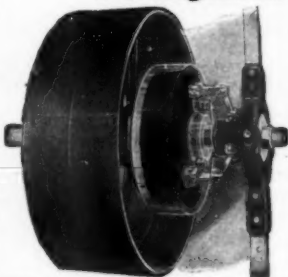
## Floor Operated Electric Traveling Cranes

do not require an operator in constant attendance and are frequently as well or better adapted for handling material than the more expensive cab operated.

We make all types of overhead cranes and hoists.

**The Euclid Crane & Hoist Company**  
Euclid, Ohio

## Pulls All That A Belt Will *The Edgemont Clutch*

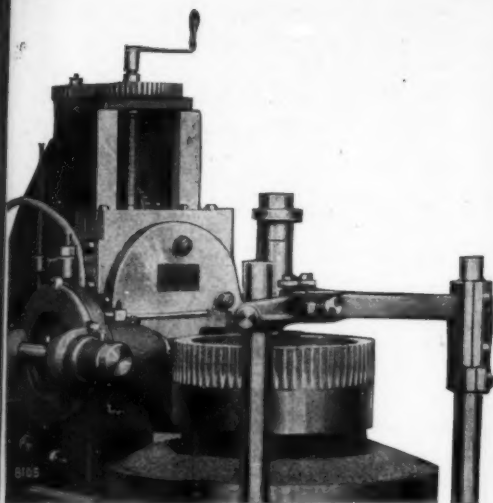


No springs or delicate parts; operates quietly; releases instantly; has plenty of adjustment for wear, and will stand the hardest usage—even abuse. Fully protected against dust and dirt. Used on machine tools and other machinery where compactness, power and dependability are prime essentials.

The Edgemont line shown in Catalogue E, covering regular and special clutches for all transmission purposes. Consult us about your clutch problem; we may help you.

**The Edgemont Machine Co.**  
National Ave. & Neilbert St., Dayton, O.





## Study the Principle of Gear Generation on the Farwell Hobber

and you will understand why these rapid machines produce such smooth running gears and are replacing other types of gear cutters.

*Write for our Gear Hobber Book No. 805-H  
which tells why and how this is true.*

**The Adams Co.,** 913 Hamilton Street,  
Dubuque, Ia., U. S. A.

## A 12 Inch Saw, \$125.

Screw Feed and Ball Bearing Thrust

Cuts 3x5 or  
1-2x9 inch.

Power Friction  
Feed.

Automatic  
Knockout.

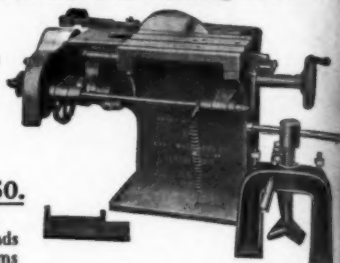
Large Clamp-  
ing Table.

20 in., \$250.

CAPACITY:

5 $\frac{3}{8}$  Inch Rounds

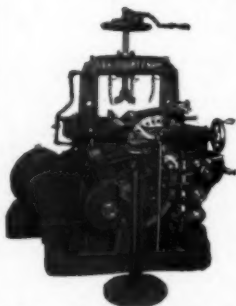
12 Inch I Beams



*Write for full particulars; they're interesting*

**The Burke Machine Tool Co.**  
Conneaut, Ohio

## Lea-Courtenay



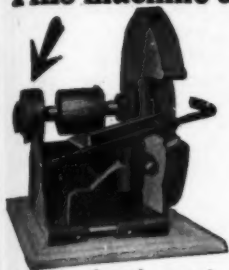
This line of cold metal sawing machinery represents the last word in metal saw design. It has an increase of effective cutting range of 55% over other sprocket driven saws carrying a blade of equal size. Our No. 21 machine carrying 21-inch blade will cut an 8 $\frac{1}{2}$ -inch bar or a 20x6 $\frac{1}{2}$ -inch I beam.

*Is this not worth considering?*

**LEA-COURTENAY COMPANY, Inc.**  
90 West Street, New York

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ring?  
Inc.

**This machine saves you money!**



*If your men cut metal by notching and breaking—the old fashioned way—they are wasting your money!*

For cutting High Speed and other hardened metals, combination metal and wood, taps, drills, reamers, brass and steel tubing, tees, channels, etc., nothing works so satisfactorily, so quickly and so economically as the

***Peter Brothers***  
Ball Bearing  
**Abrasive Metal Cutter**

***Goes through anything***

Machine shown, 12-inch size, \$50. Specially designed for shops cutting large quantity of metal. Cuts at any angle up to 45 degrees. Imported ball bearings. Two wheels furnished—8-inch size \$16.50. Adjustable gauge. Cuts square, smooth and accurately.

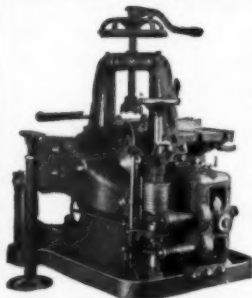
Both machines guaranteed to give satisfaction. Sold by most machinery dealers. If unable to buy locally, write to us. Immediate shipment. Prices F. O. B. Algonquin.

**Peter Brothers' Mfg. Co.**

104 Railroad Street

Algonquin, Ill.

# The Lea-Simplex



succeeds where other Cutting-Off Tools have failed, because it is the best Cold Saw on the market. Let us tell you what a long list of satisfied users have to say about the many advantages of the Lea-Simplex, which they have found in this tool.

*Ask us for our literature;  
a postal will bring it.*

**Lea Equipment Company**

Stenton and Wyoming Aves.,

Philadelphia, Pa.

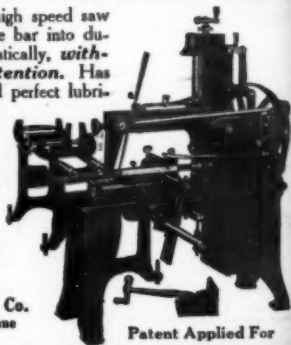
## Saws Duplicate Pieces Automatically

**The Marvel No. 5 increases results tenfold**

It's an improved high speed saw that cuts up the entire bar into duplicate pieces, automatically, *without operator's attention*. Has a draw-cut stroke and perfect lubrication. Does accurate work with minimum waste of material. All this makes the Marvel a 10 to 1 winner.

*Send for descriptive circular of this machine and other Hack Saws, Panches and Shears*

**Armstrong-Blum Mfg. Co.**  
341 N. Francisco Avenue  
Chicago, Ill.

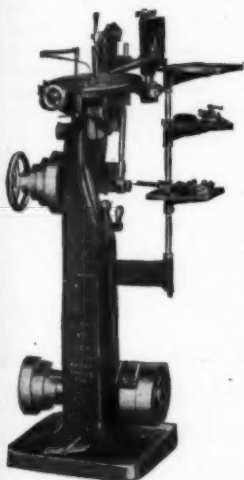


**Patent Applied For**

# Save Work

## With the Cochrane-Bly Filing Machines

Besides a lot of time and money



**No. 2 Filing Machine**

Several Government Arsenals use these machines, and they are considered indispensable in the hundreds of factories, tool rooms and machine shops in which they have been installed

Accurate filing by hand is difficult for the expert; with this machine it is easy for the novice. The machine is also much quicker, hence accomplishes more at less cost. For dies, metal patterns, jigs, small tools and tool room work generally, the filing machine is so handy and economical that no one who counts the cost of doing things can afford to be without it. Screw feed for the work is provided, and by replacing the file with a hack saw, the machine will saw out dies so closely that but little filing is needed to finish them.



**Bench Filing Machine**

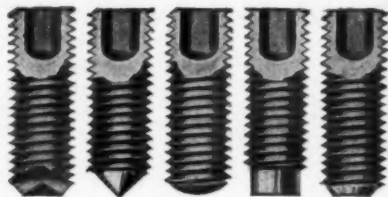
*It is too good a thing to pass by. Write for Booklet and find out all about it.*

## Cochrane-Bly Company

**Rochester, N. Y., U. S. A.**

Also Cold Saws and Automatic Cold Saw Sharpeners

## Don't Use Projecting Set Screws Anywhere



Besides a large line of regular sizes, we make to order promptly set screws of any desired point or thread.

*Send for Circular No. 13 and sample screw*

**The Allen Manufacturing Company**  
Hartford, Conn.



## Find Out!

### Vulcanized Fibre for Machine Parts

may be much better and cheaper  
than the materials you are using,  
and it's worth investigation.

**Let us figure on these parts for your machines:**

Gears  
Frictions  
Washers

Bushings  
Thrust Washers  
Guide Collars

Discs  
Handles  
Etc., Etc.

**Or send us blue prints or samples of special parts.**

Write for Catalog, which tells the story of the original Vulcanized Fibre and its uses, and contains price list on stock parts, sheets, tubes and rods.

**American Vulcanized Fibre Co.,** Wilmington, Delaware.

# RELIANCE ADJUSTABLE SPEED MOTOR

## The Machine Tool Motor

The demand of machine tool users for a *real* adjustable speed motor, one that in itself gave the adjustments in speed without external attachments, was successfully met over seven years ago by the Reliance Type AS Motor. It was a new and entirely different motor made to meet new conditions in the machine shop. This motor becomes a part of the machine, using a mechanical method for producing the speed changes. Turning the hand wheel shifts the motor armature, giving smooth but quick changes in speed over wider ranges than obtained with any other motor. No electric controller is used.

### Any Speed Easily Obtained

Another distinctive feature is that it is truly an any-speed motor. It is not limited to a fixed number of speeds. Any speed within the range of the motor can be obtained exactly to suit any cut on any material with any tool. This means maximum output under all conditions.

Briefly, other advantages of this motor for machine tool service are: a constant horsepower output, heavy overload capacity and high efficiency at all speeds; starting control separate from speed changing; simple starting equipment; is reversible and maintains a set speed steadily under changing loads.

How the Reliance Motor with the above desirable features has met the machine tool user's most exacting demands on all types of machines is fully explained and illustrated in our Folder 10L. Write for a copy—it will interest you.



**RELIANCE ELECTRIC & ENGINEERING CO.**  
1050 IVANHOE RD • CLEVELAND, O.

# Pattern Shop Machinery

Special Prices if you refer to this ad.



## Band Saws

Chicago No. 00 27 in. Wheels

" No. 0 32 " "

" No. 1 36 " "



## Saw Tables

Chicago No. 5 Stationary Table

" No. 9 Tilting Table

" No. 10

Boring attachment if wanted.



## Jointers

8 in., 5 and 6 ft. tables and guard.  
12, 16, 20, 24 and 30 in., 7 ft. table  
and guard.

Trimmers, Lathes, Core Box Tools, etc.

Ask for full descriptions

**Chicago Machinery Exchange**

1214-1228 Washington Boulevard Chicago

## Steel Handles

Ball Crank, Compound Rest,  
Ball Lever Handles, etc.

The *price* is below manufacturing  
cost of cast or forged handles, and  
in *quality* there is no comparison,  
being accurate, highly finished and  
ready to attach.

Get our catalog of standard han-  
dles, with prices and discounts—it  
pays.



**The Cincinnati Ball Crank Co.**

Oakley, Cincinnati, Ohio



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Co.



# JUNK

**Men do not get the caps  
Of Tucker's Positive Lock  
Compression Grease Cups  
They Won't Jar Off**

For Automobiles and all kinds of machinery having excessive vibration. Cup member has internally milled threads to gauge limits, ensuring interchangeability. We are prepared to furnish the cup part in pressed sheet brass in the following sizes:

$\frac{1}{4}$  in., 1 in., and  $1\frac{1}{2}$  in., all 24 pitch thread.

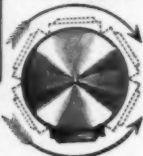
Complete Cups	{	No. 000	$\frac{1}{4}$ in. pipe shank
		No. 00	$\frac{1}{2}$ in. pipe shank
		No. 0	$1\frac{1}{2}$ in. pipe shank

PATENTED JANUARY 11, 1910

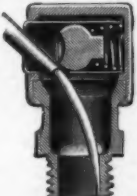
## Tucker's Oil Hole Covers



No. 5 Style B



Self Closing



Style C, Self Closing

Note the indent of ball valve on styles B & C



Send for Catalogue of full line of Covers  
for all kinds of machinery having oil holes

**W. C. & F. C. Tucker, Hartford, Conn.**

**A Boy Can Easily Make Your  
Soft Metal Vise Jaws and Hammers  
With our Low-Cost Outfits**



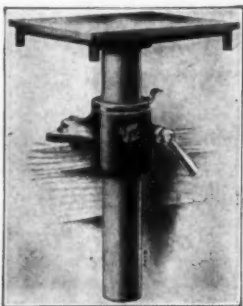
THE COMBINATION MOULD AND LADLE shown above is for making Soft Metal Vise Jaws. We also furnish them in six sizes for moulding Hammers on the handles. Just melt the metal in the ladle, depress the handle, and it runs into the mould.

*Write for description and close prices*

**CHAS. H. FIELD, Providence, R. I., U. S. A.**

**The Victor Surface Table**

**And Victor Swivelling Vise  
Make a Mighty Handy Combination**



The Victor Surface Table can be used in the base of the Victor Swivelling Vise, as shown in cut, or on bench detached from stem. A general purpose table, especially appreciated by die and patternmakers, etc.

Write for description and special approval offer on the Victor Swivelling vise, the vise hand's friend, with or without Surface Table.

**Victor Vise Co.**

19-25 W. Washington St.,  
Springfield, Ohio

# ANNOUNCEMENT

## **CHAMBERLIN COMPANY**

*TECHNICAL PUBLICITY*

**DETROIT, MICH.**

takes pleasure in announcing that Oliver W. Hull has joined the organization—to become Secretary of same upon its incorporation, which step is now being taken.

Mr. Hull is well known throughout the middle west, having been associated for many years with A. H. Hitchcock and other Chicago publishers. He brings with him a host of friends—and hopes through his association with the Chamberlin Company to make many more.

Wm. M. Chamberlin, President of the new Company, has been in the strictly technical end of the advertising business for about eight years, and is now handling some of the best technical accounts in the country. The new Company will continue along the same general lines as have been followed by Mr. Chamberlin and his associates in the past—the preparation of Technical Advertisements, Catalogs, Form Letters, Etc.

You want and should have modern conveniences in your home.

You should want and have modern methods in your shop.



## Greenerd Arbor Presses

are as necessary in your machine shop as a bath tub is in your home.

If you are fifty you can remember when no shops had **Greenerd Arbor Presses** and when you took your bath in a laundry tub in the kitchen in Winter and at the swimming hole in Summer.

Things have changed in your home; but in your shop???

**Fourteen** sizes of **Greenerd Arbor Presses** are sold by all dealers and



Made By

**Edwin E. Bartlett**

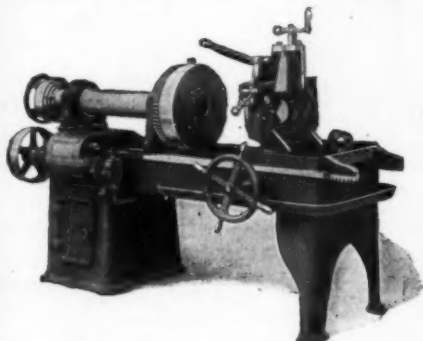
336 A Street,

**BOSTON,**

**U. S. A.**

## **Expert Advice**

often is of great value, if those who give it really are qualified. Our life work has been the designing and building of Pipe Machinery, and we believe that during those years we have learned quite a little about it.



### **Peerless, P. D. Q. C. and Duplex Modern Power Pipe Machines For ¼-in. to 18-in. Pipe**

That's what we make, in numerous regular and special types and sizes. Tell us what your pipe machinery requirements are, and let us advise you what machine will meet them best, and how and why. Or, if we haven't what you need, we shall frankly tell you so, and will try to put you on the right track.

*We shall appreciate your inquiries and  
Shall try to deserve your confidence*

**Bignall & Keeler Mfg. Co.**  
Edwardsville, Ill.

# Pull Down Your Oil Bill

With a Curtis Oil Extractor



No. 400—Capacity: 2 Bushels

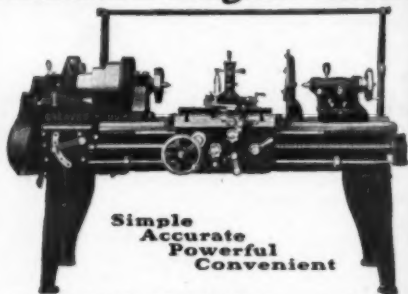
Oil that otherwise would be thrown away is taken from your chips, shavings and waste, enabling you to use it over and over. You naturally buy less oil because you make a barrel last so much longer. The machine is ball-bearing and well made thruout, easy to run and needs but little power. Made in three sizes.

*Write for details of this fine cost reducer*

**Albert B. Curtis**

25 Union St., -1- -1- Worcester, Mass.

# Standard Engine Lathes



**Simple  
Accurate  
Powerful  
Convenient**

Furnished with either standard cone or with 3-step cone double-back-geared, carrying a wide belt, with 18 spindle speeds and wide feed range.

**GREAVES, KLUSMAN & CO.**  
Cincinnati, Ohio, U. S. A.

# Washed Plated Dipped



Pieces  
Quickly Dried  
In The  
Removable Wire Basket  
Of The

## Centrifugal Dryer

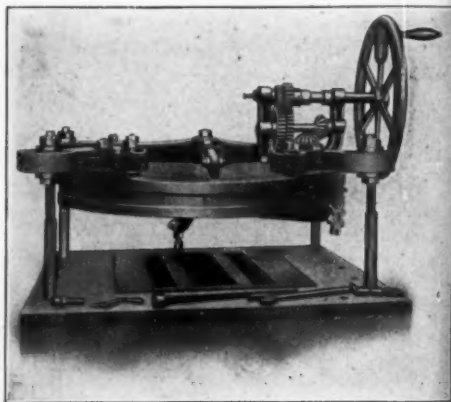
The manufacturers make only  
one profit.

The user profits whenever it is  
running.

**The American Tool & Machine Co.**  
Incorporated 1864 Boston

# Underwood's Portable Tools

## Are Big Time and Money Savers



### Our Portable Rotary Planer—Six Sizes

This improved, accurate tool often returns its cost in the saving made on a single job. It cuts repair-costs in every way—shortens the shut down—allows bolts and parts to remain intact, and reduces the labor to a minimum.

It is adapted to a big variety of work. Faces off locomotive valves, planes any surface up to 42 in. diagonal measurement, and is readily attached to almost any shaped piece. The machine work is perfect, no filing or scraping afterwards, and there's no breaking of port edges. It gives first class, reliable results at rock-bottom cost.

*Our comprehensive catalog will interest you. Write us.*

**H. B. Underwood & Company**  
1021 Buttonwood St., Philadelphia, Pa.

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## Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

### FOR SALE BY

**The Sackman Manufacturing Co.,**

**Akron, Ohio.**

Cutter grinder, Hobbs.  
Dynamo, 50-light, direct current, Myers & Robbins.  
Engine, 10 horse power, Springfield.  
Filing machine, Cochrane-Bly.  
Lathe, 21" Bradford, with two chucks.  
Planer, 22"x4' New Haven.  
Shaper, 15" Hendey.  
Shaper, 24" Juengst.  
All in use and good condition at present time.

### FOR SALE BY

**The Osborne & Sexton Machinery Co.,**

**Columbus, Ohio.**

#### LATHES.

12x 5 South Bend, h. s., cp. rest.	20x12 Fifield, comp. rest, (2).
10x 6 Blaisdell, hollow spindle.	20x12 Hamilton, h. s., c. r., taper.
20x5 Bridgeport, h. s., cp. r., taper.	48x19 Gleason, 36 in. raised.

#### PLANERS AND SHAPERS.

14 in. Steptoe.	24x24x6 Gray.
16 in. Gould & Eberhardt.	48x48x20 Belmar, 4 heads.

#### MISCELLANEOUS.

Boring mill, 50 in. Niles.	Hammers, helve, Schatz & Dayton.
Boring mill, Niles, 14-20 ft. exten.	Miller, plain, Grand Rapids No. 1.
Drills, 22 and 24 in. Barnes, complete.	Punch press, No. 12 Etna, inc.
Gas engines, 10, 15, 25, 40 & 60 h. p.	Radial drill, 5 ft. Niles, plain.
Gas furnaces, Chicago, (2).	Rolls, Toledo shovel blanking.
Hammers, drop, 300, 750 and 3,000 lbs.	Threading mches., Webster & P., (2).

### FOR SALE BY

**The Randle Machinery Co.,**

**1739 Powers St., Cincinnati, O.**

#### ENGINE LATHES.

18 in. x8 ft. McFarlan.  
14 in. x8 ft. Steptoe.  
17 in. x12 ft. Greaves-Klusman.  
Lathes complete with face plates, chuck, countershafts and all parts.

#### PLANERS.

26x26x8 ft. Oesterlein, with countershaft and all tools.

#### BOILERS.

Horiz. tubular, from 30 to 150 h. p.  
Fire box, from 8 to 1 1/2 h. p.  
Vertical, from 3 to 50 h. p.

#### MISCELLANEOUS.

Heaters, tanks, pumps, electrical, saw mill and general machinery, including a complete line of Iron Working Tools.

Also a full assortment of new machinery.

Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps.

#### MOTORS.

All sizes and kinds.  
GAS & GASOLINE ENGINES.

25 h. p. Dean.

8 h. p. Springfield.

#### ENGINES.

Corliss, from 50 to 650 h. p.

Automatic, from 15 to 350 h. p.

Throttling, from 5 to 260 h. p.

#### ELECTRIC GENERATORS.

3 1/2 to 300 k. w., belted and direct connected, alternating and direct current, with switchboards.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.**  
**BORING MILLS.**

24" bar Bement, horizontal.  
2 spindle Foote-Burt, cylinder.  
3" Lucas, horizontal.

34" King, vertical.  
42" Rogers, vertical, two heads.  
72" Bullard, 2 heads.

### DRILLS.

42" Gang, plain radial.  
36", 48" and 60" Bickford pl. radials.  
26" and 34" Barnes sliding head.  
3-spindle 20" Barnes, gang.

Style F Baker Bros., heavy.  
7-spindle Slate, gang.  
Foote-Burt, high speed.  
6-spindle Gardam, multiple.

### GRINDERS.

Pratt & Whitney, vertical surface.  
Walker, automatic surface.  
No. 11 Landis, plain.

No. 2 Osterlein, cutter.  
10" x 30" Landis, universal.  
No. 6 Rivett, internal.

### MILLERS.

Nos. 1, 2, 3 & 4 Cincinnati, universal.  
No. 5B Becker, horizontal.  
No. 5 Brown & Sharpe, vertical.  
No. 64 Becker, Lincoln.

No. 3 Owen, plain.  
No. 12 Brown & Sharpe, plain.  
8' Beaman & Smith, planer type.  
No. 24 Brown & Sharpe, plain.

### LATHES.

12" x 4' Hendey, r. & f.  
14" x 5' Hendey, c. r.  
16" x 8' Reed, c. r., p. c. f.  
16" x 8' Prentice, c. r., p. c. f.  
16" x 8' Hendy, c. r., p. c. f.  
16" x 15' Bradford, c. r., p. c. f.  
16" x 14' Flather, c. r., p. c. f., taper.  
20" x 10' Draper, c. r., p. c. f.  
22" x 10' Bullard, c. r., p. c. f.  
24" x 12' Putnam, c. r., p. c. f.  
24" x 12' Bradford, q. c., taper.  
24" x 12' Reed, c. r., p. c. f.  
26" x 12' Newark, c. r., p. c. f.  
26" x 18' Pond, c. r., p. c. f.

27" x 12' Pratt & Whitney, c. r., p. c. f.  
30" x 16' Fay & Scott, c. r., p. c. f.  
36" x 15' Lathe & Morse, c. r., p. c. f.  
38" x 20' Fay & Scott, c. r., p. c. f.  
40" x 18' Newark, c. r., p. c. f.  
50" x 16' Stone lathe.  
84" x 20' Fitchburg, triple geared.  
16-32" x 8' Fay & Scott, gap.  
20-42" x 12' Fay & Scott, gap.  
32" x 18' column facing lathe.  
16" x 10' automatic threading.  
60" Stevens, pulley.  
11" x 4' Wells, speed.  
14" x 5' American, Fox.

### PLANERS.

15" x 15" x 3' Pratt & Whitney.  
24" x 24" x 6' Wilson, 1 head.  
24" x 24" x 6' Cincinnati, motor drive.  
30" x 30" x 10' Bement, 2 heads.  
36" x 36" x 12' Lodge & Davis.  
42" x 42" x 14' Pond, 2 heads.

42" x 36" x 10' Hamilton.  
42" x 42" x 14' Woodward & P., 4 hb.  
52" x 42" x 12' Cincinnati.  
60" x 60" x 15' Sellers.  
71" x 60" x 14' Pond.  
88" x 72" x 35' Pond, 2 heads.

### HAMMERS.

25 lb. Dupont, trip.  
50 lb. Bradley, trip.

40 lb., helve, 300 lb. W. & W. drop.  
1600 lb. Pratt & Whitney, drop.

### PRESSES.

No. 23H Perkins, double acting.  
American Can, adjustable bed.

No. 2 Hibbard, inclinable.  
D. G. 74 Ferracute.

### SCREW MACHINES.

2" x 24" Jones & Lamson.  
14" x 18" Pratt & Whitney.  
No. 3 Garvin wire feed, f. b. g.  
4" Warner & Swasey, wire feed.  
No. 0 Brown & Sharpe, wire feed.  
No. 2 Pratt & Whitney, wire feed.

24" American, heavy.  
22" Libby, heavy type.  
14" x 5" Windsor, Fox Monitor.  
6", 1 and 1 1/2" Hartford.  
1" Pratt & Whitney, auto.  
1" Brown & Sharpe, auto.

### SHAPERS.

14" Lodge & Davis, crank.  
16" Gould & Eberhardt, motor.

15" Ohio, crank.  
20" Kelley, crank.

### MISCELLANEOUS.

Automatic pinion cutter, Slate.  
Bending rolls, 8", 4" cap.  
Cold saw, 9" Espen Lucas.  
Dynamometer, 40 h. p. Sprague.  
Gas engine, 6 h. p. Otto.  
Gear cutters, 24", 48" & 64" G. & E.  
Pipe machine, 3" Jarecki.

Plate planer, 19".  
Punch and shear, double end, throat, Bremer.  
Riveter, No. 60 Grant.  
Slotter, 10" Putnam.  
Slotter, 15" Dill.  
Tumbler, 30" x 24" Smith.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Motch & Merryweather Machinery Company,**

**707-715 Lakeside Av., N. W., Cleveland, Ohio**

**Branches: Detroit, Cincinnati, Pittsburg.**

Below we list a few samples of our stock of rebuilt machine tools. These machines may be inspected in Cleveland and are ready for immediate delivery.

#### BORING MILLS.

- 37" Niles, double swivel head with four face plate jaws, friction feed, very good condition.
- 37" Bullard, double swivel head, rebuilt by factory, first class condition.
- 72" Pond, double swivel head, very good condition.
- 76" Bullard, latest model, first class.
- 2" bar Lucas, belt drive, column type.
- 4" bar Bement-Miles horizontal table type boring machine.

#### DRILL PRESSES.

- 1, 2, 3, 4 and 6 spindle 14" sensitive Foote-Burt drills.
- 3 spindle Barnes, back geared, power feed, first class.
- 8 spindle Gardam multiple.
- 4' Prentiss, all gear drive, late model, very good.
- 5' Fosdick, gear drive, first class condition.
- 32" Pond, sliding head, heavy machine, old pattern.

#### GEAR CUTTERS.

- 36" G. & E., late type, excellent condition (spur).
- 40" Flather's spur, latest type, first class condition.
- 60" G. & E. spur, for pinion cutting, very good condition.
- 50" spur and bevel, G. & E., good condition.
- 66x14" G. & E. spur, with hobbing attachment, very good condition.

#### GRINDING MACHINES.

- Head No. 60 cylinder grinders, latest model, good as new, (2).
- 6x22 Norton plain grinder, late model.
- 16x50 Norton plain grinder, late model.
- 18x36 Norton plain grinder, rebuilt at factory, first class condition.

#### LATHES.

We have all sizes of lathes from 10 in. to 50 in. in stock.

#### MILLING MACHINES.

- No. 2 Kempsmith, open belt, range 19½" by 3½" by 16".
- No. 2B Brown & Sharpe, plain.
- No. 2 heavy Brown & Sharpe, plain, first class condition.
- No. 5 Brown & Sharpe, gear drive, rack feed, very good condition.
- No. 2 Becker Brainard, vertical, late model, good condition.

#### PLANERS.

- 22"x4' and 6' Gray, single swivel head, very good condition.
- 16"x4' Hendey, friction, very good condition.
- 34"x6' Powell, single swivel head, latest model, good as new.
- 26"x7' Gray, single swivel head, first class condition.
- 26"x10' Sellers, spiral drive, single swivel head, very massive machine, in good shape.
- 48"x16' Detrick & Harvey open side planer, with two heads and rolling table, all in very good condition.

#### SHAPERS.

- 15" Hendey, friction tilting table, good condition.
- 16" Queen City, back geared crank, very good.
- 22" Smith & Mills, shifting belt, good as new.
- 24" Gould & Eberhardt, bk. grd. crank, power down feed to head, good shape.
- 34" Cincinnati, shifting belt, very good, cheap.
- 24" Hendey, friction tilting table, very good.

#### TURRET LATHES AND SCREW MACHINES.

- 4" Krauth & Benninghofen screw machine, same as new.
- 3x24 Jones & Lamson, sliding head with collet and bar equipment.
- 2x24 Jones & Lamson, fixed head, bar equipment.
- 21" Gisholt turret lathe, latest model, good as new.
- 24" Davis chucking machine.
- No. 4 Bardons & Oliver, turret lathe, with geared head, equipment, bar work.
- No. 3 Bardons & Oliver turret lathe, fitted for bar work, first class condition.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago  
610 Merrill Building, Milwaukee, Wis.**

#### LATHES.

14x6 Flather and Draper, comp. rest.	24"x14" Bradford.
16x6 Prentice Bros., compound rest.	26"x10" American, q. c. g.
16x7 Pratt & Whitney, c. r. & taper.	30x12 Bradford, c. r. and chuck.
16x7 Blaisdell, comp. rest and taper.	30x12 Flather, compound rest.
16"x8" L. & S., q. c. g. and ck.	32x14 Putnam, compound rest.
18"x8" S. & B., q. c. g. and ck.	32x18 Pittsburg, d. b. g.
19x10 Cincinnati, compound rest.	32x18 American, comp. r., q. c. g.
20x8 Hamilton, q. c. g., comp. rest.	36"x20" Walcott, c. r.
22"x8" American, q. c. g.	50x20 New Haven, compound rest.

#### SHAPERS.

14" Rockford.	17 in. Economic, single grd. crank.
16" Juengst.	18 in. Flather, single geared crank.
16 in. Steptoe, single geared crank.	22 Lodge & Davis.
16 in. Walcott, single geared crank.	28 Putnam.

#### PLANERS.

22x22x5 Whitcomb, good order.	36x36x10 Niles, 2 heads.
26x26x8 Whitcomb, (new, reduced price.)	36x36x12 Gray, 2 heads.
26"x26"x8" New Haven.	40x38x14 Putnam, old style, low pr.
30x30x10 Flather, 3 heads.	42x42x14 Detrick & H., open side.
36x30x12 Sellers, old style, low price.	44x44x12 Pond, 2 heads.
	48x48x20 Belmer, 4 heads, rebuilt.

#### GRINDERS.

No. 1 Cincinnati, universal cutter and tool.	No. 2 Brown & Sharpe, surface.
No. 2 Norton, universal cutter and tool.	No. 2 B. & S., surface, with Walker magnetic chuck.
	No. 2 Walker, universal.

#### MILLING MACHINES.

No. 2 Hendy, b. g., plain.	No. 34 Fox, plain.
No. 2 Kearney & Trecker, vertical attach., all power feeds.	No. 13 Garvin, plain.
No. 4 Garvin profiler.	No. 3 Cincinnati, pl., nearly new.
No. 34 Waltham, bench.	No. 14 B. & S. plain, b. g.
No. 3 Fox, plain.	No. 3 LeBlond, universal.
	No. 6 Becker, vertical.

#### UPRIGHT AND RADIAL DRILLS.

24 ft. Fosdick National radial.	38 in. New H., sl. hd., bk. gr., p. & i.
5 ft. arm Western universal radial.	36" Hamilton, geared feed.
6 ft. Bickford plain, cone radial.	35 in. Blaisdell, sl. hd., b. g. & p. i.
Sellers double column drill, 72" between uprights, head travels full width of machine.	25 in. Prentice Bros., sl. hd., b. g. & p. i.
	24" Cin.-Bickford, tap. attach.

#### POWER PRESSES AND PUNCHES.

No. 36 Niagara, geared.	No. 734 Bliss, single crank.
Wold horn press.	Waterbury, geared, 20" stroke.
No. 30 Perkins, open back inc. press.	No. 4 Blake & Johnson, with 11 sub presses.
No. 2 Walsh, inclinable, o. b.	No. 3 Bliss "Stiles" geared punch.
No. 3 Consolidated, inclinable, o. b.	Humphrey single end punch, throat, cap. 1 1/2 in 1 in.
No. 50 Crosby, open back press.	
No. 44 E. Rudolph & Karch press.	

#### SCREW MACHINES AND TURRET MACHINES.

14" Warner & Swasey.	4 in. Cleveland automatic.
No. 3 Pratt & Whitney.	4 in. Cleveland automatic.
No. 24 Pratt & Whitney.	14" Cleveland automatic.
No. 51 National-Acme automatic.	3x36 Jones & Lamson.
No. 60 B. & S. automatic.	14 Turret Lathes, small sizes.
No. 9 B. & S. automatic.	

#### BORING MILLS—VERTICAL AND HORIZONTAL.

37 in. Niles, 2 heads.	10 ft. Betts, 2 heads.
42 in. Bullard, 1 swivel hd., 1 tur. hd.	80 in. Pond, 2 heads.
34 in. Colburn, swivel turret.	No. 2 Fosdick hor., good order.

## SECOND-HAND MACHINERY

### The H. A. Stocker Machinery Co.,—Continued.

#### GEAR CUTTING MACHINES.

No. 3 Farwell hobbing machine.	72 in. Cincinnati, spur only.
No. 0 S. & S. hobbing machine.	42 in. Gould & E., spur only.
spiral attachment.	30 in. Flather, spur only.
Reynolds hobbing machine.	26 in. Brown & Sharpe, spur only.

#### MISCELLANEOUS.

Bolt cutter, 1½ in. Schlenker.	Hammer, helve, 40 lb. Bradley.
Bolt header, 4 in.	Hammer, drop, 500 lb. Standard.
Bulldozer, No. 5 Ajax.	Hydraulic press, 40 ton.
Centering machine, 4 in. Whiton.	Hydraulic press, 100 ton, with pump.
Cold saw, No. 4 Birdsboro, with six extra saws.	Pipe machine, 4 in. Saunders.
Cutting-off mche., 5" Herlbut & R.	Punch and shear, No. 5 L. & A.
	Riveter, 3-16 in. Adt.

### FOR SALE BY

#### Chas. Molitor Machinery Co.,

215 S. Clinton St. Chicago, Ill.

Air compressors.	Lathes, 12" Hendy, taper, collets.
Air riveters and presses.	Lathe, 20"x10' Springfield, tr. gd.
Beam shear.	Lathe, 24"x8' Lodge & Shipley.
Bolt and pipe threaders, sgl., dbl.	Miller, universal, No. 1½ Brainerd.
Car wheel boring machine, 50"	Planer, 26"x28"x8' Pond.
Circle shear, 48" Niagara.	Planer, 36"x36"x16, double head, side arm.
Crane derricks.	Punches and shears, heavy.
Drill press, 3 spindle, heavy.	Squaring shear, 5'.
Grinder, universal, No. 1 B. & S.	Turret lathes, Fox, modern, (3).
Hammers, drop and trip.	

100 other iron and woodworking machines, motors, etc., etc.

### FOR SALE BY

#### Brown-McDonald Machinery Co.,

906-908-910 North Market Street, - - - St. Louis, Mo.

#### BLOWERS.

14 Blowers, all sizes, including 2 No. 7 Roots rotary.

#### COMPRESSORS.

6½ Laidlaw-Dunn-G., horiz., steam. 10x11x12 Franklin, horiz., steam.

#### DRILLS.

21" Snyder, b. g., p. f., (2). No. 33 Reed, 3 spindle sensitive.

25" Barnes, b. g., p. f., with tap. att. No. 34 Reed, 4 spindle sensitive.

#### GRINDERS.

10 Emery grinders, all sizes.

#### LATHES.

14"x 6' Porter. 16"x 6' Hamilton.

14", 16" & 18" New Monarch, (8). 17"x 8' Fifield.

15"x 6' Rockford, comp. rest, hol- 5 speed lathes.

low spindle, new.

#### MILLING MACHINES.

No. 10 Kemp Smith, plain. Cincinnati slab milling and boring machine.

No. 4 Becker-Brainerd.

#### PIPE MACHINES.

3" Curtis & Curtis, power. 2½" power.

#### PUNCH & SHEAR.

No. 6 Long & Allstatter, cap. ½ in. ½, alligator pattern

#### SHEARS.

36" power shear. 37" Acme, foot power

#### MISCELLANEOUS.

Boring mill, 54 in. Powell. Shaper, 16" Steptoe.

Cylinder borer, horizontal. Gear cutter, Brainerd.

Large stock of Engines, Boilers, Wood Working Machinery, Pulleys, Shafting, Belting, etc. Can fill all requirements. Write us.

## SECOND-HAND MACHINERY

### FOR SALE BY

Joseph T. Ryerson & Son, - 16th and Rockwell Sts., Chicago

#### PLANERS.

Item.			
H 167	Sellers, 42x42x8 $\frac{1}{2}$ , 2 heads.	H 169	Sellers, 42x42x8 $\frac{1}{2}$ , 2 heads.
H 1094	Hamilton 36x36x10.	H 946	Lodge & D. 36x36x8, 2 heads.

#### LATHES.

H 767	11x3 $\frac{1}{2}$ , speed.	H 1029	Whitcomb-Blaisdell, 18x6.
H 1025	Hendey, 14x5, q. c. g.	H 948	American, 18x10.
H 1058	Lodge & Shipley, 14x6 g. h.	H 997	American, 18 $\frac{1}{2}$ x10, q. c. g.
H 804	LeBlond, 14x8.	H 1028	Hamilton, 19x10, q. c. g.
H 1001	McMahon, 16x7.	H 925	Gray, 20x8.
H 1027	Flather, 17x8, q. c. g.	H 859	Flather, 24x10, q. c. g.
H 1054	Greaves & Klusman, 17x8.	H 945	New Haven, 28x24.
H 947	Schumacher & Boye, 18x6.	H 838	Putnam, 32x16.
H 1053	American, 18x6.	H 919	Niles 50" pulley lathe.

#### DRILLS.

H 832	Dwight-Slate 4 spdl. sens.	H 517	Snyder, 25 in. adj. head.
H 864	Quint 6 spindle turret head.	H 1016	Sibley 28 in., sliding head.
H 892	Cincinnati 20 in. lever feed.	H 916	Lodge & D., 32 in., adj. hd.
H 1035	Sibley 20" p. w. & l. feed.	H 1037	Sibley, 34", fr. hd.
H 992	Rockford 24" tp/g. att.	H 928	Niles 4 ft. radial.
H 995	Cincinnati 24" tp/g. att.	H 991	Baker No. 1, high speed.

#### GRINDERS.

H 889	Yankee style B, capacity $\frac{1}{2}$ to 2 $\frac{1}{2}$ " drills.		
H 812	Landis No. 1 universal, range 9x24.		
H 811	Brown & Sharpe No. 3 cutter and reamer grinder.		
H 976	Besly No. 10 double disc grinder with clamp.		
H 802	Cincinnati No. 2 universal tool grinder with 220 v., d. c. motor.		
H 791	Valley City No. 9, disc and surface grinder.		
H 969	Gisholt universal tool grinder.		

#### PNEUMATIC TOOLS.

H 606	Albree riveter, 25 in. reach, capacity 1 in. rivets.
H 981	Sturtevant 38" blower, 14" square discharge.
H 934	Root No. 1, positive pressure blower.

#### MILLING MACHINES.

H 665	Ingersoll, slab 36x36x8.	H 860	Kempsmith No. 8 univ.
H 636	Garvin No. 4 plain, 3 feeds.	H 737	Kempsmith No. 2 plain.
H 658	Lincoln type, 6x26 in.	H 964	Osterlein plain, 34x9x18.
H 1066	Becker No. 5B, plain.	H 940	Davis & E., No. 4 univ.

#### TURRET MACHINERY.

H 958	Cleveland $\frac{1}{2}$ in. automatic screw machine.
H 655	Pratt & Whitney $\frac{1}{2}$ in. hand screw machine.
H 796	Wells No. 140, $\frac{1}{2}$ in. hand screw machine.
H 744	Springfield Fox 18x6, turret on bed.
H 1062	Gisholt, 13" turret.
H 953	Gisholt 21 in. turret, 2 in. hole in spindle.
H 914	Conradson 24-32 turret lathe.
H 875	Garvin No. 1, $\frac{1}{2}$ " hand screw machine.
H 765	Bardons & Oliver, 13", hand screw machine.
H 834	Pratt & Whitney No. 2, $\frac{1}{2}$ " hand screw machine.

#### MISCELLANEOUS.

H 733	Boring mill, Bausch, 32", turret head.
H 918	Boring mill, 50 in. Niles, 2 heads.
H 213	Boring and drilling machine, hor., 4x27x60 in., Beaman & Smith.
H 828	Crane, hand power, 5 ton capacity, 15 ft. span.
H 672	Cutting-off machine, 3 in. Hurlburt & Rogers.
H 913	Cut-off saw, No. 3-B., capacity 20 in. beams.
H 1059	Grinder, Blount 16" wet.
H 1010	Hammer, American, 25 lb. steam post.
H 960	Hammer, steam, 400 lb. Chambersburg.
H 707	Jointer, Towsley 12".
H 208	Profiling machine, No. 2 Pratt & Whitney.
H 1061	Shaper, Milwaukee 24" crank.
H 623	Tapping machine, No. 1 Garvin automatic.

## SECOND-HAND MACHINERY

### FOR SALE BY

C. C. Wornier Mach'y Co., 94-96 W. Woodbridge St., Detroit, Mich.

Send for our No. 97 Catalog.

#### NEW ENGINE LATHES.

14"x 6' Monarch.	15"x 6' 4" Morris, quick change.
14"x 6' Bradford, standard.	16"x 6' Hamilton, quick change.
14"x 6' Bradford, quick change.	16"x 6' Hamilton, standard.
14"x 6' Bradford, taper att.	16"x 8' Conover-Overkamp, std.
14"x 8' Bradford, standard.	18"x 8' Bradford, standard.
14"x 8' Hamilton, standard.	28"x 14' New Haven, standard.

#### SECOND-HAND LATHES.

25"x 16' Schumacher & Boye.	15"x 6' Von Wyck.
28"x 16' Hamilton.	15"x 6' Flathers.
22"x 16' Putnam.	14"x 6' Prentiss.
22"x 12' Walcott & Sons.	14"x 6' Lodge & Davis.
21"x 11' Lodge & Davis.	14"x 6' Packard.
15"x 8' Whitcomb.	13"x 6' Pratt & Whitney.
15"x 10' Prentiss.	11"x 4' Mann.
16"x 6' Blaisdell.	9"x 44' Seneca Falls.

#### GRINDERS.

No. 3 Blount.	No. 24 Landis, crank.
Style B Yankee, drill.	Fellows gear cutter.
No. 70 Heald, internal.	No. 1 Gould & Eberhardt.
No. 12 Modern, plain.	Style WTA American.

#### PRESSES.

No. 53 Fowler, flywheel.	No. 50 Perkins o. b. i.
No. 2 Stiles & Parker.	No. 13 Greenerd arbor.
No. 5 Eaton, open back.	No. 31 Toledo, power.

#### DRILL PRESSES.

20" Barnes, stationary head, bk. gd.	14" & 20" Leland, heavy duty.
21" Barnes, 4-spindle style B.	3" Aurora radial.
23" Snyder.	4-spindle Pratt & Whitney.
2, 3, & 4-spdl. Woodward & Rogers.	3 & 6-spindle Fox.

#### MILLING MACHINES.

No. 4-B Becker vertical.	No. 1 Grand Rapids plain.
No. 2 Davis & Egan plain.	No. 1 Cincinnati, plain.

#### TURRET MACHINES.

21" Davis boring and forming.	No. 5 Foster
22" Gisholt.	No. 4 Bardons & Oliver.
Libbey full swing.	No. 2 American universal.
No. 2 Jones & Lamson.	19" Pratt & Whitney plain.

#### SCREW MACHINES.

No. 3 Hartford automatic.	No. 3 Foster geared.
No. 2 Brown & Sharpe.	No. 3 Pratt & Whitney, plain.
No. 6 Brown & Sharpe, plain.	No. 1 Pratt & Whitney, plain.
1" Cleveland automatic.	1" Cleveland automatic.

#### PUNCH AND SHEARS.

20" throat, double end.	34" blade, alligator.
No. 14 Buffalo, hand.	No. 6 Pond, hand.

#### BUFFERS AND POLISHERS.

No. 12 Builders.	No. 2 Norton.
No. 4 Vulcan.	No. 3 Diamond.

#### MISCELLANEOUS.

Boring mill, vertical, 30 in. Bullard.	Hot air pumping engine, No. 5
Boring mill, vertical, 34 in. King.	Economy.
Cold saw, No. 5 Cochrane-Bly.	Keyseater, No. 0 Mitts & Merrill.
Cutting-off mch., No. 2 Hurlburt & R.	Keyseater, No. 2 Mitts & Merrill.
Cutting-off mch., No. 4 Hurlburt & R.	Milling and drilling machine, No. 1
Gas furnace, No. 6 American.	Knight.
Gas furnace, No. 18-A Acme.	Pipe machine, 3 to 3" No. 7 Jarecki.
Gear shaper, 36 in. Fellows.	Shaper, 16 in. Kelly, crank.
Hack saw, power, No. 1 Sterling.	Shaper, 16" Smith & Mills, crank.
Hammer, steam, No. 3 Bell.	Speed lathe, 11"x 4' Blount.
Hammer, steam, No. 277 Erie.	Spinning lathe, 20" No. 6 Bliss.
Hammer, upr. strap, 75 lb. Bradley.	Tapper, No. 4 St. Louis.
Hammer, upr. strap 125 lb. Bradley.	Tapper, horizontal, No. 1 Garvin.

## SECOND-HAND MACHINERY

### FOR SALE BY

Niles-Bement-Pond Company,

111 Broadway, New York

Located at Chicago, Boston and New York.

Send for Catalogue No. 18.

### LATHES.

13x5 Sebastain.  
13x6 P. & W., r. & f., taper.  
14x5 American, brass, Fox att.  
14x6 Bradford, compound rest.  
14x6 Bradford, comp. rest, taper  
15x7 speed lathe.  
16x6 Prentice, compound rest.  
16x6 Pratt & Whitney geared head  
tool room lathe.  
16x8 LeBlond, compound rest  
16x8 Prentice, compound rest.  
16x8 Hendey, compound rest.  
16x10 P. & W., r. & f. & t.  
18x6 Pond, turret tool post.  
18x7 Pond, turret tool post.  
18x8 Flather, quick change.

19x8 Pond, compound rest.  
20x10 Flather, c. r.  
22x12 Niles, with taper.  
22x22 Niles.  
26x12 Pond, comp. rest.  
28x12 Pond, compound rest.  
30x14 Niles c. r.  
32x12 Pond, compound rest.  
36x17 Pond, 220 v. motor drive, tap.  
36x18 Bement, comp. r., tri. grd.  
36x28 Bement, comp. r., tri. grd.  
40x16 Bement, b.g., not screw cutting.  
42x22 Niles, comp. r., tri. grd.  
42x30 Putnam, comp. r., tri. grd.  
44 in. P. & W. pulley lathe.

### SCREW MACHINES, TURRET LATHES, ETC.

14x5 American, square arbor.  
14 in. B. & O. hand screw mch.  
No. 3, 2 1/2-16 in. Niles screw mche.  
2x24 Jones & Lamson.  
3x36 New Model P. & W.  
21 in. Gisholt, turret.  
24-27 Conradson semi-automatic tur-  
ret, 2 1/2-16 in. hol. sp.  
28 in. Milwaukee turret, 4 in. hol. sp.

1/2 in. Hartford automatic pin machine.  
1/2 in. P. & W. automatic screw mach.  
1/2 in. P. & W. 2 sp. automatic screw  
machine.  
1/2 in. Acme old style 4-sp. automatic.  
1/2 in. single turret Spencer automatic.  
21-32 in. No. 2 Brown & Sharpe auto-  
matic screw machine.

### BORING MACHINES.

30 in. tur. hd. b. & t. mill, Colburn.  
50 in. Niles pulley borer,  
7 ft. Pond b. & t., 2 heads.  
6 ft. Pond b. & t., 2 heads.  
10-16 ft. Niles, like new.

2 in. sp. Kelly hor. bor. and drill.  
3 1/2 in. sp. Bement hor. bor. & drill.  
4 in. sp. Betts, hor. bor. & drill.  
96 in. swing x10 ft. centers bor. & ho-  
ling; weight: about 43,000 lbs.

### UPRIGHT AND SENSITIVE DRILLS.

13 in. 1 sp. sensitive, motor d., 110 v.  
10 in. 2 sp. sensitive, Slate.  
10 in. 3 sp. sensitive, Slate.  
10 in. 3 sp. sensitive, Signourney.  
14 in. 4 spindle W. & R. sensitive.  
14 in. 4 spindle, style A, Barr.  
2 spindle dbl. column sen., Langelier.  
17 in. 4 sp. gang, Jones & L.  
20 in. No. 23 Foote Burt high duty.

30 in. sli. head, Gould & Eberhart.  
36 in. sliding head, Gould & E.  
3 sp. Niles rail drill, arrgd. for motor.  
4 spindle Bement, multiple, 11 ft.  
between housings.  
No. 11 multiple drill, P. & W.  
10 sp. adjustable R. & W., capacity  
1 1/2 in. holes in 37 in. circles, belt or  
motor; weight: 30,000 pounds.

### RADIAL DRILLS.

2 1/2 ft. semi-radial, Niles & J.  
4 1/2 ft. semi-radial, Barr.  
4 ft. Niles, plain.  
4 ft. Niles, univ.  
5 ft. Niles, plain.

5 ft. plain, motor, Pond.  
5 ft. 6 in. universal, Niles.  
6 ft. 10 in. semi-universal, Niles.  
7 ft. 6 in. full universal, Niles.  
Univ. portable radial, Prentice.

### MILLERS AND GEAR CUTTERS.

No. 1 Duplex Van Norman.  
24x7 table, plain, Becker.  
43x9 1/2 No. 3 Cincinnati plain, b. g.  
Single sp. profiler, 21x24 in. table,  
Garvin.  
P. & W. spline miller.

6x14 thread miller, P. & W.  
6x80 thread miller, P. & W.  
36" spur and bevel, Gould & E.  
36 in. spur gears, Pond.  
49 in. spur gears, Brown & Sharpe.  
72 in. spur gears, Niles.

### SHAPERS AND SLOTTERS.

10 in. crank shaper, P. & W.  
10 in. crank shaper, Miles.  
12 in. crank shaper, Bement.  
20" Bement, 220 v. motor, traveling  
head, like new.

18 in. double trav. head, Cincinnati.  
32 in. triple grd. rack, Cincinnati.  
12 in. crank slotter, Bement.  
14 in. crank slotter, Niles.  
18 in. crank slotter, Bement.

46 in. Niles

22x22x6  
24x24x6  
26x26x7  
26x23x6  
30x30x6  
30x30x2  
21x22x14  
36x36x 8  
36x36x20

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## SECOND-HAND MACHINERY

### Niles-Bement-Pond Company—Continued.

#### RAILROAD MACHINERY.

46 in. car wheel lathe. Bement.  
Niles double axle lathe.

Bement double axle lathe.  
Putnam double axle lathe, ex. heavy.

#### PLANERS.

22x22x6 Harrington.  
24x24x6 Powell.  
26x26x7 Niles, heavy type.  
26x23x16 Miles, 2 hds.  
30x30x6 Pond, 1 hd.  
30x30x24 Sellers, 2 hds.  
32x32x14 Pond, 2 hds.  
36x36x8 Niles, 1 head.  
36x36x20 Pond, 3 hds.

42x42x12 Woodward & P., 4 hds.  
42x42x20 Miles, 3 hds.  
48x48x16 Pond, 4 hds., heavy, 220 v. motor.  
48x48x20 Sellers, 3 hds.  
48x48x34 Pond Wks., N-B-P, 4 hds.  
50x50x18 Gleason, 2 hds.  
72x60x20 Niles, 2 hds.  
86x86x35 Pond, 4 hds.

#### MISCELLANEOUS.

Bar cut-off saw, 22" diam. blade.  
Bending and straightening machine, horizontal, for 10 to 15 in. beams and channels.  
Cut-off machine, 2½ in. P. & W.  
Cut-off machine, 4½ in. Starr.  
Engine, 28 Watertown.  
Grinder, drill, 3 in. Sellers.

Grinder, plain, 5x32 in. Landis.  
Grinder, univ., 10x30 Landis.  
Grinder, 12x96 in. Springfield.  
Grinder, tool, Gisholt.  
Saw grinder, automatic.  
Spring wind and cut-off machine, auto., for springs 7-32x½ in. long to 1 in. long, 1-16 in. between coils.

#### FOR SALE BY

**E. G. Eldridge Machinery Co., 29-31 N. Jefferson St., Chicago, Ill.**

To reduce our large stock of used machinery, we are offering special inducements on the following:

Automatic, 1½" Gridley, 4 spindle.  
Automatic, 1½" Gridley, 4 spindle.  
Bolt pointer, 2" Acme, style A.  
Boring mill, large horizontal, Newark.  
Bulldozer, steel body, No. 1 Ajax, high speed, 5" stroke.  
Cutting-off machine, 2" Warner & Swasey.  
Disc grinder and rivet spinning mch. combined, Schulz, horiz., dbl. spindle.  
Drill, 3 spindle gang, Baker, high duty.  
Drill, 4 spindle gang, No. 3 Garvin, 4" capacity.  
Engine lathe, 12"x6" Ames, 2" blocks.  
Engine lathe, 14"x6" Monarch standard.  
Engine lathe, 22"x10" Schumacher & Boye.  
Engine lathe, 25"x12" Blaisdell.  
Extension gap lathe, 12"-22"x5½" Barnes.  
Flat turret lathe, 24" Ring, for bar work.  
Gear and pinion cutter, automatic, Dwight Slate.  
Gear shaper, belted, 16" Hendey.  
Gear shaper, 24" Fellows.  
Grinder, osc. surface, 20"x5" Springfield, planer type, 41½" bet. housings.  
Grinder, universal face, Johnston; write for photo.  
Lathe, 14"x6" Whitcomb-Blaisdell, 3 step cone, double back gear.  
Lathe, 14"x8" Lodge & Davis, with taper.  
Lathe, 18"x10" Schellenbach, 3 step cone, double back gear.  
Lathe, 24"x8" American universal Fox Monitor.  
Miller, hand, small, power feed.  
Miller, No. 2 Pratt & Whitney, Lincoln type.  
Miller, plain, No. 2 Brainard, back gear, div. head.  
Miller, plain horizontal, No. 3½ Pratt & Whitney, 4' table, power feed.  
Press, No. 3 R. & K. double acting, open back inclinable, 3" stroke.  
Punch and shear combined, No. 2 Cincinnati, architectural jaw, 12" throat.  
Radial drill, plain, 6" Pond, write for photo.  
Screw press, hand, R. & K. quick acting, solid back.  
Screw press, R. & K. straight side, 12" bet. uprights.  
Shaper, crank, 16" American.  
Wire straightening and cutting-off machine, 3-16" Shuster, "ADT" model.  
Many other machines, small tools, attachments, belting, etc. Write for list and description.

## SECOND-HAND MACHINERY

### FOR SALE BY

**W. L. Perkins Machinery Co.**

**30 Church St., New York**

#### LATHES.

16"x 6' Reed, plain rest, hol. spdl.  
18"x 7' Pond, compound rest.  
22"x 10' Harrington, compound rest.  
24"x 8' Harrington, compound rest.

28"x 16' New Haven, c. r., hol. spdl.  
30"x 15' Sellers, compound rest.  
32"x 12' Fitchburg, compound rest.  
32"x 14' Harrington, compound rest.

#### MISCELLANEOUS.

Boring machine, hor., No. 2 Bement.  
Nut tapper, 6-spindle Acme.  
Pipe machine, 4" Jarecki.  
Planer, 20"x 20"x 36" New Haven.

Planer, 25"x 25"x 56" Sellers.  
Planer, 32"x 32"x 8' Pond.  
Planer, 36"x 36"x 26" Miles.  
Slotter, 12" Sellers, all feeds.

### FOR SALE BY

**McCoy & Brandt,**

**410 House Building, Pittsburg, Pa.**

Will make low prices on following tools to move quickly:

Bending rolls, 6' 3/4" plate.  
Bending rolls, 8' Badger, 1/4" plate.  
Bending rolls, 8' Newbold, 1/4" plate.  
Holt cutter, 3" Acme.  
Borer, horizontal, 3 3/16" spindle.  
Boring mill, 72" Niles.  
Boring mill, 84" New Era.  
Bulldozer, No. 5 Ajax.  
Bulldozers, No. 2 and No. 5 W. W.  
Compressor, 9x10x9 Dayton duplex,  
285 cu. ft.  
Drill, sensitive, 2-spindle Gardam.  
Forging machine, 1 1/2" National.  
Planer, 24"x 22"x 6" New Haven.

Planer, 42"x 42"x 15" New Haven.  
Punch, No. 2 L. & A., 9" throat.  
Punch, No. 7 L. & A., 18" throat.  
Punch, 36" Cleveland, cap. 2"x 1".  
Punch, 72" Hilles & Jones.  
Punch, No. 14 W. W. dbl. end, 12d".  
Punch, horiz. 6' throat, Thompson.  
Shaper, 10" Putnam, traverse hand.  
Shaper, 18" Hendy, b. g.  
Shaper, crank, 18" Lodge & Davis.  
Speed lathe, 12"x 15" Blount.  
Turret lathe, No. 4 J. & L.  
Turret lathe, No. 2 W. & S., 11" h.s.

### FOR SALE BY

**Frevert Machinery Co.,**

**38 Vesey St., New York City**

#### GRINDERS.

No. 3 B. & S., surface.  
26" Diamond, roll and spindle.  
No. 1 Cin'ti, plain cutter & reamer.

24" Yankee style A., twist drill.  
24" Heald style C., twist drill.  
No. 2 Diamond, wet tool.

#### DRILLS.

3' arm Gang radial.  
60" post drill, b. g., wheel feed.  
4-spindle turret drill.

4-spindle Dwight Slate.  
1/4" capacity bench electric drill.

#### POLISHING HEADS.

No. 22 Bridgeport, 14".  
12" Diamond.  
No. 1 1/2 Diamond.

No. 6 Green electric.  
14" R. O. polishing machines.

#### SCREW MACHINES.

1" P. & W., hand.  
1" Prentiss, hand.  
12-32" No. 1 B. & S. automatic.

7 16" Cleveland automatic.  
14" B. & O. No. 3.

#### SHAPERS AND PLANERS.

16" Smith & Mills crank shaper.  
10" Cincinnati triple gd. shaper.  
26"x 26"x 8' P. & W., 1 hd., on rail.

10x10x24" Hendey bench planer.  
9x6x24" Federal planer, iron stand.

#### MISCELLANEOUS.

Gear cutter, Whiton automatic.  
Gear & pinion cutter, Slate auto.  
Hammer, power, 50 lb. Forsythe.  
Hammer, power, 100 lb. Williams-W.  
Lathe, 12"x 5' Davis, s. c., el. rest.  
Lathe, 14"x 5' Robbins, s. c., pl. r.

Lathe, 15" brass finishers, Fox.  
Miller, No. 2 Putnam, univ., b. g.  
Miller, No. 3 P. & W., Lincoln pat.  
Miller, hand, Chicago.  
Profiler, No. 3 Garvin.  
Riveter, 1" Adt rotary.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Lake Erie Machinery & Supply Co., (Machinery Dept.)**  
**408-412 Frankfort Ave., N. W. Cleveland, Ohio.**

Revised list of Second Hand Machinery at reduced prices. Write for prices.

#### LATHES.

- |   |   |
|---|---|
| 11"x 4' Star, milling att., 2 chucks.   | 20"x 10' engine lathe.                      |
| 14"x 6' Bradford, h. s., c. r., chuck.  | 24"x 16' Gleason, plain rest, chuck.        |
| 14"x 6' New Haven.                      | 24"x 26' New Haven.                         |
| 16"x 8' I. Johnson, taper att.          | 24"x 28' Bradford shaft lathe, h. s., c. r. |
| 16"x 6' Blaisdell.                      | 30"x 16' Lowell.                            |
| 16"x 8' Walcott & W., quick change.     | 32"x 22' Enterprise, raised to 40".         |
| 18"x 6' Blaisdell, tur. on carriage.    | 34"x 22' Enterprise.                        |
| 18"x 8' Bradford.                       | 50"x 15' bull lathe.                        |
| 18"x 6' Blaisdell, b. g., p. r., taper. | 88"x 20' Niles bull lathe.                  |
| 20"x 8' W. & W., q. c. fd., h. s., new. | 40" Kilby pulley lathe.                     |
| 20"x 8' Walcott & W., qk. chg., (2).    | 9" foot power lathe.                        |

#### TURRET LATHES & SCREW MACHINES.

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1" Cleveland automatic.              | 24" W. & S. Monitor turret lathe.   |
| No. 2 Pratt & W. plain turret lathe. | 16"x 6' Lodge & B. b. g. Fox lathe. |
| 14" Pratt & Whitney turret lathe.    | No. 00 B. & S. auto. screw machine. |

#### SHAPERS.

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| 16" Walcott & Wood, triple gd., new. | 24" Hendy, triple geared.            |
| 16" Barker, back geared crank, new.  | 20" W. & W. high spd., b. g., crank. |
| 16" Walcott, b. g. crank, complete.  | 26" Lodge & Davis, triple geared.    |
| 16" Hendey and Smith & Mills.        | 28" Steptoe, triple geared.          |

#### DRILLS.

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| No. 1 Prentice Bros. radial. 4' arm.  | 26" hand drill press, complete.     |
| 13" Dwight Slate 4-spdl. sensi., (2). | 21" Hoefler 6-spindle, complete.    |
| Prentice 4-spindle sensitive.         | 22" Lodge & Davis, sliding head.    |
| No. 2 Garvin, 3-spindle gang.         | 36" Baker Bros., complete.          |
| No. 4 Garvin, 4-spindle gang.         | Gardam, multiple spindle.           |
| 15" drill press.                      | Foot-Burt, multiple spindle.        |
| 20" Canedy-Otto drill press.          | No. 1 Burke, bench, with Jacobs ck. |

#### PLANERS.

- |                                |                                  |
|--------------------------------|----------------------------------|
| 16"x 16"x 24" Belden. 1 head.  | 40"x 40"x 10' Steptoe-McFarland. |
| 17"x 17"x 18" Whitcomb, crank. | 48"x 48"x 30' Belmar, 4 heads.   |
| 24"x 24"x 7' Powell.           | 60"x 60"x 18' Pond, 3 heads.     |
| 26"x 24" 6' L. W. Pond.        |                                  |

#### MILLING MACHINES.

- |                               |                                |
|-------------------------------|--------------------------------|
| No. 2 Pratt & Whitney, plain. | No. 3 Becker, vertical.        |
| No. 3 Kempamith, plain.       | No. 2 Hendy Norton, universal. |

#### NUT TAPPERS AND BOLT CUTTERS.

- |                               |                          |
|-------------------------------|--------------------------|
| 1" Acme 6-spindle nut tapper. | 3" Reliance bolt cutter. |
|-------------------------------|--------------------------|

#### PRESSES.

- |  |                                      |
|--|--------------------------------------|
| D2 Ferracute, plain.                   | No. 7 Niagara, plain, o. b. i.       |
| No. 19 Bliss punch press.              | G. A. Crosby punch press.            |
| No. 21 Bliss, punch, o. b. i., (6).    | No. 1 Stiles punch press.            |
| No. 31 Bliss, punch pr., o. b. i.      | No. 3 G. A. Crosby punch press.      |
| Nos. 52 & 71 Bliss, straight side, pl. | No. 1 Stiles & Parker punch press.   |
| No. 41 Toledo plain power press.       | No. 3 Stiles b. g. punch press, with |
| No. 4 American Can, plain, o. b. i.    | 3 extra bolster plates.              |

#### GRINDERS.

- |                                    |                                    |
|------------------------------------|------------------------------------|
| No. 1 Thompson univ., motor drive. | 24" Leland, wet tool.              |
| Barnes, wet tool.                  | 24"x 7' Springfield auto. surface. |

#### MISCELLANEOUS.

- |                                     |  |
|-------------------------------------|--|
| Alligator shear.                    | Grinders, lathe center, Gem. (6).      |
| Blower, No. 8 Sturtevant Monogram.  | Grinder, tool post, 110 v. Hisey, d.c. |
| Boring bars, (9).                   | Hack saw, 6" Challenge.                |
| Boring machine, vertical, American. | Hammer, steam, 500 lb. Bell            |
| Broaching mach., Waterbury-F.       | Keyseater, No. 6 Morton, 4 cutters.    |
| Chuck, 24" Westcott combination,    | Keyseater, No. 2 Davis.                |
| with 2 sets jaws, pract. new.       | Magnet wind'g lathe, high-speed.       |
| Exhauster, No. 3 Champion, new.     | Punch & shear comb., 4' Keene.         |
| Exhausters, three 28"; one 50".     | Slotter, vertical, 12".                |
| Floor crane, 1 1/2 ton Franklin.    | Tapping mchs., No. 2 Garvin auto.      |
| Gas engine, 3 h.p. Fairbanks-Morse. | Welder, port. acetylene, Economy.      |

## SECOND-HAND MACHINERY

### FOR SALE BY

**O. L. Packard Machinery Co.,** - - - **Milwaukee, Wis.**

#### LATHES.

14"x 6" Blaisdell lathe, solid spindle,	\$ 165.
14"x 6" Flatler, hollow spindle,	300.
14"x 6" Hamilton, c. r., power cross feed, hollow spindle,	225.
18"x 6" American, compound rest, hollow spindle,	300.
24"x12" Blaisdell lathe	300.
24"x12" Aldrich & Calver lathe	300.
28"x20" Harris lathe,	300.
16" turret lathe,	110.
18" Lodge turret lathe, power feed,	125.
1" screw machine, Dreses, nearly new,	275.

#### MISCELLANEOUS.

Pipe machine, No. 8 Merrill	\$ 275.
Planer, 25"x25"x16" Fitchburg	450.
Screw machine, 3" Pratt & Whitney,	275.
Shaper, 2 spindle, wood top,	90.
Shaper, No. 24 Clement, wood top,	125.
Shaper, Indiana, 2 spindle, no table,	75.

### FOR SALE BY

**A. D. White Machinery Co.,** - - - **108-114 N. Jefferson St., Chicago**

#### LATHES.

12x5 P. & W., taper and chucks,	18x8 American, latest pat.
14x5 Reed, taper, 2 chucks,	18x10 Schumacher & B., 16 in. ck.
14x6 Porter, compound rest,	24x10 Lodge & Shipley, qk. change.
16x6 Flatler, 2 chucks,	28x14 Fifeild.
18x8 Schellenbach, q. change,	32x14 Porter, 20 in. chuck.

#### DRILLS.

18 in. Blaisdell.	32 in. Bickford, sliding head.
28 in. Bickford, sliding head, (4).	40 in. Aurora radial.
30 in. Kerkhoff, sliding head,	3 ft. Bickford radial, cheap.
30 in. Bickford, sliding head.	

#### PLANERS.

24x 6 Pond, 1 head.	32x 8 Betts, 1 head.
25x 6 Sellers, spiral drive,	36x12 Cincinnati, 2 heads.
26x 6 Gray, 1 head.	38x10 Gray, 1 head, fine.
26x 8 Gray, 1 head (2).	52x25 Betts, 1 head.
28x 8 Gray, 1 head (2).	

#### SCREW MACHINES AND TURRET LATHES.

16 in. No. 3 Pearson screw machine.	3 in. P. & W., automatic.
No. 24 Pratt & Whitney sc. mche.	13 in. Dreses turret lathe.
3 in. Cleveland, automatic.	21 in. Gisholt, rapid traverse.
3 in. Pratt & Whitney, automatic (4).	24 in. Gisholt, rapid traverse.

#### PUNCH PRESSES.

No. 2 Ferracute, (3).	No. 3 Niagara, inclinable.
No. 3 Ferracute, double action.	No. 754 Bliss, 4 in. stroke.
No. 16 Walsh, inclinable, (2).	No. 31 Walsh, gap.
No. 19 Bliss, inclinable.	No. 15 Waterbury, geared.
No. 20 Thiem inclinable.	

#### MISCELLANEOUS.

Boring and facing machine, No. 1 Beaman.	Keyseater, No. 2 Catlin.
Grinder, cutter, H. G. Barr.	Keyseater, 16 in. Morton.
Hammer, power, 35 lb. Justice.	Miller, No. 12 Garvin, (3).
Hammer, power, 50 lb. Dienelt.	Riveters, 3-16 in. Adt.
Blowers, No. 3 Garden City, (2).	Shaper, 14 in. P. & W., univ. vise.
Hammer, steam drop, 5000 lb. Erie.	Shapers, 16 in. Smith & Mills.

Did you get our new "Yellow Book"?

## F. P. S.

Air co.  
Wes  
Belting  
Clutch  
Exhaus  
inlet  
Grindst  
Hamme  
double  
Lathe, l  
Lathe, c

## Rumely

20"x 9"  
26"x12"  
26"x12"  
22"x10"  
22"x10"  
24"x12"  
24"x24"

23" Bar  
24" Mech  
24" Ham  
24" Bick  
26" Bar  
28" Sible  
32" Gould

12" Sprin  
12" Lodg  
15" Henc

No. 14 K  
No. 2 Ke  
No. 3 Ke  
No. 3 Cin  
No. 32 Ke

24"x24"x  
26"x26"x  
26"x26"x  
30"x30"x

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Cutter and  
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Cutter and  
Norton.  
Grinder, p  
Keyseater,  
Keyseater,  
Keyseater,  
Lathe, met  
Lathe, No.  
Monitor.  
Lathe, 18"

## SECOND-HAND MACHINERY

### FOR SALE BY

**F. P. Schlelein Mchy. Co., 114-116 W. Park Way, N. S., Pittsburgh, Pa.**

Air compressor, steam, 9 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x10"  
Westinghouse, with tank.  
Belting, 10" double leather, 35 ft.  
Clutch pulley, 20"x8", 2" bore, iron.  
Exhaust fan, No. 9 Champion, 16"  
inlet and outlet.  
Grindstone frame, iron, stone 28x3".  
Hammer, steam, 600 lb. Pittsburg,  
double frame.  
Lathe, bench, 7" Goodell-P., pwr.  
Lathe, engine, 10"x4" Sebastian.

Lathe, engine, 14"x6" Monarch.  
Lathe, turret, No. 4 Bardons & O.  
Lathe, turret, 12" Lodge & Davis.  
Motor, 2 h. p. Lundell, 500 v., d. c.  
Planer, pony, 24"x6" Fay & Egan.  
Pressure blower, No. 4 Buffalo, 5"  
outlet.  
Radial drill, portable, No. 4 Dallett.  
Radial drill, plain, 4 $\frac{1}{2}$ " Baush.  
Wire cutter, capacity  $\frac{1}{4}$ ", Shuster,  
hand power.

### FOR SALE BY

**Rumely-Wachs Machinery Co., 126 N. Jefferson St., Chicago, Ill.**

#### LATHES.

26"x 9" Draper.  
26"x12" LeBlond, quick change.  
20"x12" LeBlond standard.  
22"x10" Haisdell.  
22"x10" Gleason.  
24"x12" Hamilton.  
24"x24" Fifield.

26"x14" Fifield, triple geared.  
30"x18" Niles.  
32"x12" Schumacher & Boye, q. c.  
26"x12" Schumacher & Boye.  
36"x14" Fifield.  
26"x14" New Haven.  
Large variety of lathes from 11" to 18"

#### UPRIGHT

DRILLS.  
40" Lodge & Davis, sliding head.  
3" American, plain radial.  
3" Hiles & Jones, plain radial.  
4 $\frac{1}{2}$ " Bickford, plain radial.  
Also large assortment of 20" drills  
and smaller, in single and multi-  
ple spindle.

#### SHAPERS.

12" Springfield, single geared.  
12" Lodge & Davis, single geared.  
18" Hendey, friction.

15" Gould & Eberhardt.  
18" Walcott, triple geared.  
32" Walcott, triple geared.

#### MILLING MACHINES.

No. 14 Kempsmith, universal.  
No. 2 Kempsmith, plain.  
No. 3 Kempsmith, plain.  
No. 3 Cincinnati, plain.  
No. 32 Kempsmith, Lincoln.

No. 3 Becker, vertical.  
No. 6 Becker, vertical.  
Also lot of small milling machines  
and hand millers.

#### PLANERS.

24"x24"x 6" Whitcomb.  
26"x26"x 6" Flather.  
26"x26"x 7" Niles.  
26"x30"x 8" Putnam.

36"x36"x 8" American, double head.  
26"x35"x15" Powell, frog and switch.  
Number of smaller planers.

#### MISCELLANEOUS.

Boring mill, 42" Bullard, 2 heads.  
Boring mill, 42" Colburn, 2 heads.  
Boring mill, horiz., Niles, 24" bar.  
Cutter and reamer grinder, Cincin'tl.  
Cutter & reamer grinder, Greenfield.  
Cutter & reamer grinder, LeBlond.  
Cutter and reamer grinder, No. 2  
Norton.  
Grinder, plain, No. 2 Landis.  
Keyseater, No. 90 Baker Bros.  
Keyseater, No. 3 Mitts & Merrill.  
Keyseater, No. 3 Baker Bros.  
Lathe, metal spinning, 22" Fryibil.  
Lathe, No. 3 Bardons & Oliver, Fox  
Monitor.  
Lathe, 18"x6" Springfield, Fox Mon.

Lathe, 24" Conradson, manufact'g.  
Lathe, 24" Gisholt, late model.  
Pipe machine, 6" Saunders.  
Punch press, No. 3 Walsh, o. b. i.  
Punch press, No. 21 R. & K., o. b. i.  
Punch press, No. 3 Crosby, sol. bk.  
Punch press, No. 4 Crosby, sol. bk.  
Punch press, No. 23 Michigan, s. bk.  
Screw machine, No. 4 Warner & S.  
Screw machine, No. 6 Brown & S.  
Steam hammer, 350 lb. Bement-M.  
Turret lathe, No. 2 Bardons & O.  
Turret lathe, flat, 2x24 Jones & Lam-  
son sliding head.  
Turret lathe, 18"x6" Lodge & D.  
Turret lathe, 25" Warner & Swasey.

Write for complete List just issued.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Fred. C. Dickow,**

**33 So. Desplaines St., Chicago**

LATHES.	
19"x 6' New Haven.....	\$ 50.
23"x16' New Haven.....	135.
13"x 6' Pratt-Whitney.....	115.
TURRET LATHES.	
11"x3 1/2' Foster & K.....	\$165.
MISCELLANEOUS.	
Horn press, W. E. Jones.....	
Planer, 20x20x 5 N. Haven.....	\$115.
Punch press, T. Wold.....	
Engine, kick presses, grinders, buffing and polishing machines, tire bender motor, 10" universal index centers, etc.	
20"x 8' Forsaith.....	\$30.
50"x14' New Haven, compound rest, power cross feed.....	60.
TURRET LATHES.	
16"x 5' Foster & K.....	\$100.
MISCELLANEOUS.	
Punch press, No. 193 West.	
Punch press, No. 2 Norton Bros.	
Shaper, 14" Walcott.....	\$100.

### FOR SALE BY

**Russell Machine Co.,**

**28th St. and A. V. R. R., Pittsburgh, Pa.**

LATHES.	
12"x 6' Young.	24"x14' Blaisdell.
14"x 6' Blaisdell.	24"x16' Lodge & Shipley.
16"x 6' Jones & Lamson.	28"x16' Bridgeford.
20"x 7' Johnson.	30"x20' Bradford.
22"x10' Putnam.	54"x12' No Name, Old Style.
PLANERS.	
24"x24"x6' New Haven.	30"x30"x 6' Putnam.
25"x26"x 7' Flather.	36"x36"x 8' Pond, heavy duty.
MISCELLANEOUS.	
Boring mill, single head, 72" Niles.	Milling machine, No. 2 Cincinnati.
Milling machine, universal, No. 3 Lodge & Davis.	Punch and shear, belt dr., cap. 4"x4".
Milling mch., No. 0 Brown & Sharpe.	Shapers, 18" and 28" Gould & E.
	Turret head, 34" Bullard.

### FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,**

**210-212 Washington Ave.,**

**St. Louis, Mo.**

LATHES.	
14"x12' American.	44"x16' Pond.
20"x 8' Blaisdell.	60"x28' New Haven.
22"x10' American.	24" Gisholt, turret.
26"x15' Pond.	24" Stevens, pulley.
PLANERS.	
16"x16"x18" crank.	36"x36"x10' American.
26"x26"x 7' Niles.	44"x44"x16' Niles.
28"x26"x 8' Lodge & Davis.	
DRILLS.	
24" American, sliding head.	48" arm Fosdick, radial.
28" American, sliding head.	60" Bickford, goose neck.
32" American, sliding head.	
AIR COMPRESSORS.	
6x6 belted.	10x10x10 steam driven.
8x8 belted.	500 ft. steam driven.
8x8x8 steam driven.	960 cu. ft. steam driven.
10x12 belted.	
MISCELLANEOUS.	
Bolt cutter, 3".	Miller, plain, No. 3 Cincinnati.
Cold saw, No. 16 Higley.	Punch, Pels, 23" throat.
Hammer, belted, 90 lb.	Screw machine, 11-16" Pratt & W.
Hammer, drop, 200 lb. Mossburg & Granville.	automatic.
Hydraulic jack, 50 ton.	Screw machine, No. 2 Bardons & O.
Keyscater, No. 6 Morton.	Screw machine, 1" Cleveland auto.
	Slotter, 16" New Haven

## SECOND-HAND MACHINERY

### FOR SALE BY

**Brown & Zortman Machinery Co., 2535 Liberty Ave., Pittsburg, Pa.**

#### LATHES.

24 in. Jones & Lamson.	21 in. x 8 ft. New Haven.
18 in. American Tool & Machine	60 in. x 18 ft. New Haven, with 14 ft.
brass lathes, (2).	extension, triple geared.

#### PLANERS AND SHAPERS.

30x30x12 Sellers planer.	24 in. Juengst shapers, (2).
24x42x18 Betts planer.	26 in. Kelly shaper.
4x84x14 Niles planer, 3 heads.	28 in. Juengst shaper.
60x26x6 Lodge & Davis planer.	30 in. Morton draw cut shaper.
16 in. Cincinnati back geared shaper.	

#### RADIAL DRILLS.

No. 1 Bickford, plain.	30 in. Mueller, plain.
------------------------	------------------------

#### MISCELLANEOUS.

Grinder, universal, No. 2 Diamond.	Pulley boring machine, 50 in. Niles.
Grinder, universal, No. 2 Landis.	

### FOR SALE BY

**Frank Toomey, Inc., 127 N. Third St., Philadelphia, Pa.**

#### LATHES.

11"x30" Baker, blocked to 62 1/2"	21" x 9' Lodge & Davis.
8"x16" Niles.	20" x 10' American, taper attach.
10"x22" Bement-Miles.	20" x 8' Fay & Scott, universal, (2).
10"x18" Bement-Miles.	18" x 10' Draper.
8"x16" Ffield.	18" x 8' Bradford.
7"x21" Pratt & Whitney, taper att.	18" x 8' Reed.
8"x17" Johnson, taper attachment.	16" x 6' Hendey.
22"x18" Harrington.	16" x 6' Fitchburg.
11" x 7' Le Blond, taper attachment.	6" Rivet lathe, all attachments.

#### PLANERS.

10"x60"x14" Pond, two heads.	24"x24"x 6" American, 2 heads.
8" widened to 35"x 8' Hendey.	22"x22"x 6' Powell, two heads.
13"x33"x12" Woodward & Powell.	12" Moore crank planer.
12"x28"x 7' New Haven.	

#### SHAPERS.

14x24" Fitchburg, traveling head.	18" American.
14" American.	16" American.
10" Gould & Eberhardt.	12" Bement.

#### RADIAL DRILLS AND DRILL PRESSES.

8" Superior, sliding head.	23" Barnes, stationary head.
4" Barnes, sliding head.	

#### MILLING MACHINES.

6"x12" slab, heavy pattern.	No. 1 Brainard plain, table 12x48.
No. 3 Pedrick & Ayer universal,	No. 22 Garvin, vertical.
53" table.	No. 1 Van Norman duplex, table 2x9.
No. 3 Becker Brain'd pl., table 12x42.	Pratt & Whitney plain, table 55x5.

#### MISCELLANEOUS.

Boring mill, vert., 36" Bridgeport.	Internal grinding lathe, 16"x
Boring mill, horiz., 48" Bement.	Diamond.
Boring and turning mill, vert., 60"	Pipe machines, 3" and 6" Curtis &
Sellers, 2 heads.	Curtis, hand power, (2).
Broaching mach., No. 2 LaPointe.	Pulley boring machine, 60" Har-
Grinder, universal, No. 2 Brown &	rington, upright.
Sharpe.	Punch and shear, double end, No. 2
Grinding planer, 22"x22"x5' Spring-	Royersford.
field.	Punch and shear, dbl. end, Sellers,
Hammer, steam, single frame, 400-	30" throat, 1 1/2" cap., wt. 35,000 lbs.
lb., Chambersburg.	Shear, single end, 50" throat, 2"
Hammer, board drop, 500 lb., Pratt	capacity, engine driven.
& Whitney.	Turret lathe, No. 6 Brown & S.
Pipe machine, 8" Saunders.	

Dynamos, motors, engines and boilers. Wood-working machines both new and second-hand. Send for our stock books.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,**  
**210-212 Washington Ave., St. Louis, Mo.**

Here are three exceptional bargains:

#### CYLINDER BORING MACHINE.

6' Niles horiz. Corliss engine cylinder boring machine for boring cylinders two ports and facing both ends of cylinders at one setting and operation.

#### BORING AND TURNING LATHE.

30' Pit lathe for boring and turning fly-wheels, band wheels and rope wheels.

#### ELECTRIC CRANE.

46' span 25-ton electric traveling crane. three motors, 220 volts, d. c.

### FOR SALE BY

**The H. A. Smith Machinery Co., 384 W. Fayette St., Syracuse, N. Y.**

- |           |   |
|-----------|---|
| No. 157-S | Air compressor, 10x10x12 Chicago Pneumatic, single stage.   |
| No. 226-A | Bending rolls, 8', self contained.                          |
| No. 259-S | Boring mill, vertical, 30" Gisholt.                         |
| No. 238-S | Lathe, 16" x 8' Hendey, elevating rest.                     |
| No. 225-S | Lathe, 26" x 8' Reed, compound rest.                        |
| No. 188-S | Lathe, 21" Gisholt, almost new, and considerable equipment. |
| No. 185-A | Lathe, 42" x 16' Fitchburg, triple geared.                  |
| No. 235-S | Milling machine, No. 32 Kempamith, with dividing head.      |
| No. 254-S | Planer, 24" x 24" x 6' Putnam.                              |
| No. 186-S | Planer, 42" x 42" x 14' New Haven, single head.             |
| No. 228-A | Planer, 54" x 54" x 8' Fitchburg.                           |
| No. 225-A | Plate planer, 19'.  |
| No. 260-S | Shaper, 17" Kelly.  |

### FOR SALE BY

**Western Machinery Co., 6th and Baymiller Sts., Cincinnati, Ohio**

We have just purchased a complete small shop at Dayton, Ohio, the equipment of which for a quick turn can be bought at low cash prices. A portion of it we list as follows:

- |                                     |  |
|-------------------------------------|--|
| Band saw, 26".                      | Lathe, 15" x 6' Von Wyck.                                |
| Brake, 8'.                          | Lathe, 18" x 8' Perkins.                                 |
| Burring machine.                    | Milling mch., No. 2 Owen, planer with 10" index centers. |
| Drill presses, 20, 22 & 25" Barnes. | Motor, 3 horse power.                                    |
| Gap lathe, 18" x 8' Shepherd.       | Planer, 24" x 24" x 6' G. A. Gray.                       |
| Gas engine.                         | Shears, 4" and 9".                                       |
| Grinder, universal tool room.       | Tinners' shears, 26".                                    |
| Hack saws, power.                   | Belting and miscellaneous machinery.                     |
| Hand punches.                       |  |
| Lathe, 13" x 6' Miami Valley.       |  |

We carry a full line of lathes, planers, shapers, radial and plain drill presses and other machine tools, machinery and supplies.

Also have a 16" Bulldozer, old style, good running condition, at \$23.00 quick sale.

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For a large list of used wood-working machinery, consult the **Wood-Working Machinery List**, a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had on application to the publisher, **A. H. Hitchcock, 1220-1235 Caxton Building, Chicago, Ill.**



If You Want to Buy or Sell  
**Second-Hand Machinery**  
Or if you have any for sale

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**Buffalo Tool & Supply Co.**  
40 Henry St., Buffalo, N. Y.

What they can do for you.  
They are equipped to make it interesting.

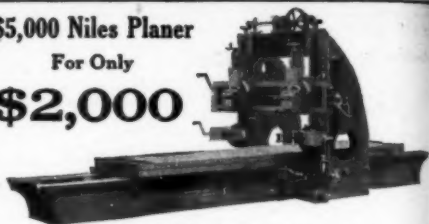
**Machine Tool Makers**

should investigate carefully the facilities offered by **Hitchcock's Machine Tool List** for reaching this trade in all parts of the country. Its circulation is specialized to completely cover *every line of manufacture* in which machine tools are used—as well as all railroad and other tool-using shops—with a thoroughness and effectiveness not equalled by any other advertising medium.

**\$5,000 Niles Planer**

**For Only**

**\$2,000**



**54"x54"x20'—4 Heads—Good Condition.**

\$3,600 Ingersoll Slab Miller, 36"x8'	\$1,350
\$4,200 Stiff Leg Derrick, 75 ft. Boom	800
\$3,000 Cylinder Grinder, perfect condition	600
Badger Punch, Shear & Rod Cutter, 4" in 1	150
1/2" in 1/4" Heavy Punch	110
1/2" P. & W. Turret Lathe	125
New Portable Floor Crane	50
Ball Bearing Abrasive Metal Saw, Cuts 2" (guaranteed)	80
\$1,200—7 ton Bliss Arch Press, not back geared	600
\$1,700—7 ton Bliss Toggle, 12" Drawing Press	800

**THE ENTERPRISE MCHY. CO., 521 Monroe St., CHICAGO**

**We make Gooding & Stone Bros. Cylinder Grinder, 1-32" cut, 1" per min.**

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**Ba**  
**Bo**

**20**  
**Drill**

**Gear**

**We**

**Sen**

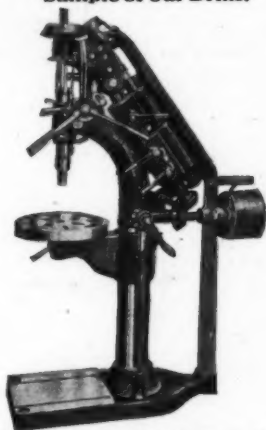
**Mars**  
**17 S. J.**

# Bargains In Used Machines

## Boring Mills.

- 36" Niles, two swivel heads.
- 42" Baush, two swivel heads, 3 jaw combination chuck.
- 60" King, motor drive, with motor, 2 swivel heads.
- 48" Swing car wheel borer.

## Sample of our Drills.



**20" Barnes Humpback Drill, with Back Gears, Power Feed, Auto. Stop.**

## Drills.

- National Automatic drill, 10 spindles.
- Three spindle Barnes gang.
- Bickford four spindle multiple.
- Upright Drills, 15" swing to 42" all makes, Barnes, Rockford, Snyder, Hamilton, Aurora, Mechanics, etc., a very large line, fine condition.
- 2 1/2" Gang radial, cone drive, swinging table.
- 42" Cincinnati Bickford radial, gear box drive, plain table.
- 4' Arm Bickford plain radial, cone drive, box table.
- 5' Arm Western full universal radial.

## Gear Cutters.

- 18" Brainerd.
- No. 1 Farwell gear hobber.
- Four spindle Norris multiple gear cutter.

We have Lathes, Planers, Shapers, Milling Machines, Grinders, Turret Lathes, and Screw Machines, etc.

Send for our July list "Used Machinery" giving complete descriptions.

**Marshall & Huschart Machinery Company**  
 17 S. Jefferson St., Chicago. 334 N. Capitol Ave., Indianapolis.  
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# THE E. L. ESSLEY MACHINERY CO.

555-557 WASHINGTON BLVD CHICAGO  
222 GRAND AVE MILWAUKEE

## Drills.

- |   |   |
|---|---|
| 4 spindle Dwight-S sensitive drill.           | 23 in. Bickford, b. g., w. & l. feed.     |
| 4 spindle Quint turret drill.                 | 26 in. Blaisdell, sl. hd., w. f.          |
| 6 spdl. No. 3 Garvin, mult., table fd.        | 26 in. Bickford, heavy type, b. g., w. f. |
| 20 in. S. & W., sq. base.                     | 24 in. Aurora, sta. head, b. g., p. f.    |
| 18 in. Baker Bros. high speed.                | 25 in. Barnes sta'y hd., b. g. and p. f.  |
| 23 in. Barnes Sr., st. hd., b. g., p. f. (3). | 28 in. Lodge & D., sl. hd., b. gd., p. f. |
| 26 in. Bickford, st. hd., b. g.               | 34 in. Barnes sl. hd., b. g., p. f.       |
| 21 in. Hamilton, b. g., p. f.                 | 2 ft. American, sensitive radial.         |

## Engine Lathes.

- |                                     |  |
|-------------------------------------|--|
| 15x6 Walcott, back geared, rebuilt. | 18x10 Putnam.                          |
| 16x6 Muller, b. g., p. c. f.        | 20x12 LeBlond, p. r., h. s.            |
| 16x6 Springfield, c. r., p. c. f.   | 22x11½ New Haven, c. r.                |
| 16x7 Springfield, c. r., p. c. f.   | 24x12 Schumacher & B., c. r., p. c. f. |
| 18x8 Blaisdell, c. r., h. s.        | 30x16 Schumacher & B., comp. rest.     |
| 18x10 Blaisdell, plain rest.        | 30x17 Gleason, pl. r., p. c. f.        |

## Miscellaneous Lathes.

- |  |  |
|--|--|
| 30 in. x 8 ft. P. & W. p. hd. chucking lathe, 24 in. 4-j. chk., p. f. to t. s. | Pearson b. g. hub machine, like turret lathe, 24 in. h. s. |
| 13 in. Gisholt, standard turret, comp.   | 22x7 Lodge & D., turret, bk. gd.                           |

## Planers.

- |                              |  |
|------------------------------|--|
| 24x24x 6 L. W. Pond, 1 head. | 20x50 Pedrick & Ayer, travel. head, open side. |
| 30x30x16 Hamilton, 2 heads.  |  |

## Screw Machines—Turret Lathes.

- |  |   |
|--|---|
| 2 in. Cleveland automatic.               | 18 in. Lodge & D., b. g., p. f. to turret slide, 2 in. w. f. cap. |
| No. 3 Foster-K. pl. hd., 1½ in. cap.     | 2 in. x 24 in. Jones & L. flat turret, cone head, fine order.     |
| No. 2 Warner & S., pl. hd., w. f., ¾ in. |   |
| No. 1 Pratt & W. screw machine.          |   |

## Miscellaneous.

- |   |   |
|---|---|
| Blower, No. 4 Sturtevant, 7 in. out.            | Keyseaters, No. 1 Morton, 18 in. stroke, (2).   |
| Blower, 30 in. Buffalo, 5½ in. outlet.          | Keyseat miller, J. T. Burr.   |
| Blower, No. 6 Boston & Co., S.                  | Miller, American hand.  |
| Bolt cutter, 1 in. National, dbl. hd.           | Miller, No. 5-B Becker-B, plain.  |
| Bolt cutter, 1½ in. Nat'l. sgl. hd.             | Miller, No. 3 Garvin, plain.  |
| Bolt cutter, 1½ in. Adams, single.              | Miller, No. 2½ Garvin, plain, b. g.   |
| Boring mill, 37 in. Bridgep't, 2 hds.           | Miller, No. 2 Kearney & Trecher, back geared, plain.                                      |
| Boring mill, 52 in. Rogers & Hemphill, 2 heads. | Pipe mche., 4 in. Borden, complete.   |
| Boring mill, 30 in. Colburn, 3j. ck.            | Punch and shear, No. 2 Colburn, double end, 20 & 8 in. throats, capacity 4x1½ in. rounds. |
| Boring mill, 51 in. Niles, 2 hds.               | Punch press, No. 75½ Bliss, st. sided, not geared.  |
| Boring mill, 60 in. Niles, 2 hds.               | Punch press, No. 4 V. & O., straight-sided, 2 in. stroke, 31" bet. uprights.              |
| Cold saw, No. 4 Keystone, 4½ in.                | Punch press, No. 6 R. & K., geared, o. b. l., roll feed.                                  |
| Cutting-off mach., 2 in. Hurlbut & R.           | Riveter, 1 in. Shuster.   |
| Gas furnace, No. 1 Westmacott.                  | Roll threading mche., Rudolph & L.  |
| Gear hobber, No. 1 Adams-Farwell                | Squaring shear, 50 in. power.   |
| Gear hobbars, Reynolds (2).                     | Tapper, No. 1 Garvin, vertical.   |
| Grinder, Gisholt universal tool.                | Toggle press, 10 ft. Robinson.  |
| Grinder, disc, No. 4 Bealy, 18 in.              |   |
| Grinder, plain, Brown & S., 12x18 in.           |   |
| Grinder, No. 3 Brown & S.                       |   |
| Grinder, 20x3 Diamond, single wet.              |   |
| Grinder, Greenfield, tap and die.               |   |
| Grinders, No. 1 Bath univ., (2).                |   |

60"x10"  
Bet  
56"x16"  
50"x20"  
Putn  
50"x18"  
48" ext  
72"x24"  
42"x30"  
38"x26"  
36"x16"  
30"x14"  
for se  
28"x15"  
24"x14"  
back g  
24"x12"  
22"x12"  
22"x8"  
21"x10"  
20"x8"  
16"x6"  
12"x6"  
RAD  
6 arm P  
5' and 5½'  
5 arm B  
3½ arm B  
2 arm A  
2 arm A  
DRL-SP  
26-48" sv  
McCab  
est heav  
internal  
SH  
Trav. hd.  
16" str. S.  
25" str. S.  
I  
14-20" swin  
motor d  
6" Pond he  
5" Bullard.  
3½" Bullard  
Car wheel  
TI  
28" Pond.  
Bullard 26"  
Bogert 24"  
Potter &  
22" swive  
Jones & L  
M  
Hor. flange  
24" Throat  
10"8" Bendi  
6" Bending  
400 lb. Stear  
700 lb. Stear  
Gas engine.

J. J. M

**"The greatest clearing house of them all"—J. J. McCABE**

### LATHES.

66"x40' extra heavy triple-geared Betts.  
58"x16' triple-geared Putnam.  
80"x28' triple-geared extra heavy Putnam.  
50"x18' triple-geared Fitchburg.  
48" extension gap.  
72"x24' Harr. blocks to 68-92".  
42"x20' extra hvy. triple-grd. Betts.  
38"x28' Fitchburg, blocks to 53".  
36"x16' Putnam.  
30"x14' Bement-Miles extra heavy, for severest duty.  
28"x15' Blaisdell, blocks to 32".  
24"x14' Fitchburg 3 step cone, dbl. back gears.  
24"x12' Putnam, hol. spdl. chuck.  
22"x12' Porter h. s. blocks to 34".  
22"x 8' Putnam hol. spdl. chuck.  
21"x10' Pond, hol. spdl. chuck.  
20"x 8' Pond.  
18"x 6' Hendey hol. spdl. chuck.  
12"x 6' Reed, hol. spdl.

### RADIAL DRILLS.

6' arm Pond hvy. pattern.  
5' and 5½' heavy Prentice.  
5' arm Bickford spd. box.  
2½' arm Baush.  
2½' arm Amerc'n spd. box.  
2' arm American.

### DBL-SPINDLE LATHE.

26-48" swing, 22" bed.  
McCabe's patented latest heavy pattern with internal grd. face plate.

### SHAPERS.

Trav. hd. 12" str. Sellers.  
16" str. S. & M. bk. grd.  
28" str. S. & M. hi. spd

### BORING MILLS.

14-20' swing Niles ext. type dbl. hd., motor drive 125,000 lbs.  
6' Pond heavy pattern, dbl. head.  
3' Bullard, turret head.  
2½' Bullard, turret head.  
Car wheel borer, 3' Baker Co.

### TURRET LATHES.

28" Pond. Rigid Type 4½" hole.  
Bullard 26" comb., tri. grd. 3½" hole.  
Bogert 24" hole.  
Potter & Johnson semi-automatic 22" swivel 2" holes.  
Jones & Lamson 2x24" with tools.

### MISCELLANEOUS.

Hor. flange punch, Hilles & Jones.  
24" Throat punch, Bliss.  
1½" Bending rolls, dr. end hous'g.  
6" Bending rolls.  
400 lb. Steam hammer, Erie.  
700 lb. Steam hammer, Bell.  
Gas engine, 15 h. p.

### PLANERS.

134x80x26' Pond.  
84x84x16' Niles 3 H.  
76x76x14' Pond 2 H.  
72x76x30' Niles 4 H.  
72x72x14' Niles 4 H motor driven.  
60x60x12' Pond 4 H.  
56x56x16' Gray 2 H.  
48x48x16' Pond 3 H.  
48x48x12' Pond 2 H.  
48x48x12' Detrick & Harvey 2 H.  
48x48x7½' Sellers.  
48x48x10' New Haven.  
42x14' Pond.  
42x42x12' Pond 2 H.  
36x36x12' Betts 4 H.  
36x36x10' Bement-Miles 2 H.  
36x36x10' Pond 1 H.  
36x36x 8' Pond 2 H.  
36x36x 8' Pond 1 H.  
30x30x 8' Woodward & Powell 1 H on rail and 1 side head.  
26x26x 7' New Haven.  
22x22x 5' Worcester.

### MULTIPLE DRILLS.

14-sp. Baush high speed.  
8-spindle Western.

### SPECIAL LOT of LATHES.

18 and 21" S. & B. make.  
10' & 12' beds, 3-step cones, dbl. bk. grs., with and without q. c. g.

### MILLING MACHINES.

Univ. Garvin No. 3 wt. 4,000 lb. all auto. feeds.  
Pl. Garvin No. 15, table 42x12, weight 2,200 lb.  
Ver. B. & S. table 53x16.  
Heavy Mfrs. style table 58" weight 4,000 lb.

## A STRONG INDUCEMENT

to buy these Used Tools now—is the low prices at which they can be bought before moving from shop where used. High class Machines—all Modern styles.  
**J. J. McCABE, N. Y.**

### HORIZONTAL BORING and MILLING MACHINES.

2 13-16" bar "Knee Type."  
2½" bar "Floor Type."  
3" bar "Knee Type."

### SLOTTERS.

19" stroke Bement-Miles.  
16" stroke Bement-Miles.  
13" stroke Niles-Bement-Pond.  
12" stroke Sellers.

### GEAR CUTTERS.

30" Gould & Eberhardt, spur only.  
22" Cleveland spur & spiral.

### MISCELLANEOUS.

Universal grinding machine Brown & Sharpe No. 3.  
Bolt cutter, Wiley & Russell 2" good as new.  
Keyseater, 16" stroke, Morton Co's.  
Pipe machine 4 to 4" Philadelphia.  
Cutting-off and centering machine 10" Bement.

**J. J. McCABE, 30 Church St., NEW YORK**

### **Planers.**

Whitcomb 22x22-in.x6-ft., A-1.  
Flather 22x22-in.x5-ft., first class.  
Wheeler 24x24-in.x6-ft., first class.  
Hendey 24x24-in.x6-ft., first class.  
Powell 27x27-in.x6-ft., two heads.  
Pond 36x36-in.x8-ft., single head, parallel drive.

### **Keyseater.**

Baker No. 2, practically new, with equipment of Cutter Bars.

### **Geared Head Lathe.**

Prentice Patent Geared Head Lathe, 24-in.x13-ft., actual swing 27-in. compound rest, taper attachment, automatic individual stops to the carriage, crowning attachment for pulleys, with Special Tool Holder carrying four tool blocks, practically new.

### **Plain Radial.**

Western 5-ft. Plain Radial Drill, single belt drive, tapping attachment, condition A-1.

### **Milling Machine.**

Brown & Sharpe No. 5 Plain Milling Machine, table over all 66x16-in., a heavy powerful machine in good condition.

### **Screw Machines.**

Gridley Automatic, 2½-in. capacity, two years old.  
Hartford Automatics, ¾, ⅝, ¾ and 1-in. capacity.

### **Bending Rolls.**

Power Bending Rolls 6-ft., ½-in. plate.

**Chandler & Farquhar Company**  
**Boston, Mass.**

# **NEW**

## **And Slightly Used Machinery At Attractive Prices**

### **New**

- 15 in.x6 ft. Rockford Lathe.
- 18 in.x8 ft. Rahn-Larmon Lathe.
- No. 2 Owen Plain Milling Machine.
- No. 3 Owen Plain Milling Machine.
- No. 3 Owen Universal Milling Machine.

### **Slightly Used**

**Mostly from our Works equipment and  
thoroughly rebuilt by us.**

- 14 in.x6 ft. Cisco Lathe, Compound Rest.
- 20 in.x8 ft. American Patented Geared Head Lathe, with turret tool post and turret on shears.
- 21 in. Gisholt Manufacturing Turret Lathe.
- 24 in. Gisholt Manufacturing Turret Lathe.
- 24 in.x18 ft. American Loose Chg Gr. Lathe, C. R.
- 28 in.x12 ft. American Loose Change Gear Lathe, with 36 in and 50 in. swing raising blocks.
- 24 in.x24 in.x12 ft. American Double Head Planer.
- 4 ft. Bickford Plain Radial Drill.
- 5 ft. American Plain Triple Geared Radial Drill, practically as good as new.
- 5 ft. Western Plain Radial Drill.
- 6 ft. Bickford Plain Radial Drill.
- 6 ft. American Full Universal Radial Drill.
- American Hand Milling Machine.
- No. 3 Cincinnati Universal Milling Machine.
- No. 6 Becker-Brainerd Vertical Milling Machine, with power feed rotary attachment.
- Brown & Sharpe Plain Grinding Machine, capacity 12 in. diameter.
- Wais & Roos 100 lb. Hammer.
- Baker Brothers Combined Sprocket Turning and Boring Machine.

**The American Tool Works Co.**  
**Cincinnati, U. S. A.**

# Splendid Bargains

## In Metal Working Tools

Are used daily doing good work. Demonstration to visitors.

### All in thorough good order

Planers, assorted sizes; Bar and Chucking Turret Lathes; Engine Screw Cutting Lathes; Pulley Lathes; Radial and Upright Drills; Emery Grinders; Vises; and many other useful things for the Machine Shop—all fully illustrated and told about in

*Our Descriptive Price List.*

*Pamphlet yours for the asking*

**The Cordesman-Rechtin Co.**  
Cincinnati, Ohio

In replacing our manufacturing equipment, we find the following first class Used Machine Tools which we offer at attractive prices:

#### LATHES

16" x 6' Hendey, q. c. g.  
16" x 8' Reed.  
17" x 6' Gray.  
20" x 8' Lodge & Shipley, q. c. g.  
20" x 10' Lodge & Shipley, q. c. g.  
20" x 12' Lodge & Shipley, q. c. g.  
24" x 8' Lodge & Shipley, q. c. g.

#### SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.  
24" x 7' Lodge & Shipley Chucking Lathe.  
14" x 6' Towsley Speed Lathe.

#### METAL SAWS

No. 3 Nutter-Barnes Cold Saw.  
Globe Power Hack Saw, 8" cap.

#### MISCELLANEOUS MACHINES

One Marion Double Grinder.  
One Marion Double Grinder on stand.  
One Diamond Disc Grinder on column.  
One Sturtevant Blower, Diameter of outlet 2½".  
No. 3 Greenough Arbor Presses.  
Universal Swivel Table for Radial Drill.  
Fay & Egan Single Spindle and Disc Sander.  
Brown & Sharpe Grindstone Frame for 5" x 36" Stone.  
One Mueller Grindstone Frame for 4" x 27" Stone.  
One 12" x 40" Mumford Molding Machine.

**The Lodge & Shipley Machine Tool Co.**  
CINCINNATI, OHIO, U. S. A.



# The Value of Office Appliances

(The Magazine)  
to You

who are the buyers and users of office appliances, supplies and furniture—you who pay the bills and count the cost—is not based on theoretical plans or ideas. It is the more tangible value of dollars and cents. Its advertisements tell you just what, where and how to buy to simplify office methods, and to save you money in the doing.

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**The Office Appliance Co.**  
Plymouth Building, Chicago, Ill.

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**With Seamless Trays**



Made in sizes 20x26-in. and 26x32-in., furnished in any one of four styles of mountings—quick-facing ball swivel casters; with feet; with ball-thrust pivot base, or in the truck type, with either two or three trays. Also furnished with drawer.

Here is a remarkably strong tool rack, made of No. 16 gauge pressed steel, yet it has less than half the weight of gray iron—an important item in utility as well as in cost of transportation. Rivet holes pierce only the top edge of the trays, so that they are oil tight. The rounded internal corners are easy to keep clean. The apron flange, dropped full depth of the trays, gives them a finished appearance and makes them stiff and substantial.

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